NETWORK WORLD
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BT, MCI pair up in global net tag team

By Bill Burch
Washington Correspondent

WASHINGTON, D.C. — BT and MCI Communications Corp. last week ganged up to take on rival AT&T, forming a joint venture the companies hope will put them at the top of the international network market.

BT and MCI, respectively the world's fourth and sixth largest carriers of international traffic, plan to set up a shared network platform and offer dedicated links, virtual private networks, and advanced data and toll-free services.

The preliminary agreement calls for BT to acquire 20% of MCI for $4.3 billion and MCI to buy out BT's North American operations for $125 million. BT will become MCI's largest shareholder and receive three seats on MCI's board, while MCI Chairman Bert Roberts Jr. will get a seat on the BT board.

The deal awaits government approvals. In the U.S., the deal does not need approval from the Federal Communications Commission since foreign carriers can

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PHOTO ©1993 PETER DAMROTH
Sanjiv Ahuja talks about IBM's evolving net management plans.

Customer choice is key to IBM management strategy

Q&A IBM is now in the throes of realigning and rationalizing its management initiatives. Its goal, true to the SystemView strategy outlined more than two years ago, is to facilitate systems and network management in heterogeneous, multivendor local- and wide-area computing environments. Management functions now available only on separate management systems — such as LAN Network Manager, LAN NetView and NetView/6000 — will be consolidated and offered across multiple management systems.

Customer choice and flexibility are key themes of the new strategy, as is the concept of distributed management: multiple management systems working cooperatively to handle large enterprise networks.

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NEWSPAPER
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Cabletron stacks deck in its favor

By Skip MacAskill
Senior Writer

ROCHESTER, N.H. — Call it the Baskin-Robbins approach to hubs.

Cabletron Systems, Inc. this month will dole out its first stackable hubs in a variety of flavors that offer a range of capabilities, including integrated bridging and routing, according to sources close to the company.

The firm is also expected to announce its plans for so-called boundary routing capabilities, which ease support of remote sites on an internetwork.

Cabletron's new stackable hubs will be based on its Multi Media Access Center (MMAC) intelligent hub and recently announced Bridge Router Interface Module (BRIM), and will include managed and unmanaged Ether-

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Critics hit AT&T on custom network shift

By Ellen Messmer
Senior Correspondent

NETWORK WORLD'S R.A.F. READER ADVOCACY FORCE

WASHINGTON, D.C. — AT&T has quietly begun steering customers away from Tariff 12 packages to contract deals, a move that could cost unwary users some key custom net benefits.

The generous features in Tariff 12 — such as stabilized rates, custom billing, network management and the promise not to change terms mid-deal — are not included in contract deals. Unless negotiated otherwise, contract tariffs simply provide discounted tariff rates for a term commitment but are subject to change when tariffed rates fluctuate.

Users considering three- or five-year contracts should ask themselves, "Am I willing to make this substantial commitment and get nothing more than a discount?" said James Blaszak, an attorney with

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Microsoft claims the office

Microsoft at Work to unify business equipment.

By Caryn Gillooly
and Fredric Paul
Network World Staff

NEW YORK — Microsoft Corp., supported by a raft of office equipment vendors and service providers, this week is expected to unveil a sweeping plan to link almost all types of office equipment under a single architecture.

Called Microsoft at Work, the architecture will define a suite of hardware and software interfaces designed to enable Windows applications to control facsimile machines, printers, copiers, telephones, advanced telephony services and even mobile computing devices.

According to a source close to Microsoft who requested anonymity, Microsoft at Work "will provide a communications standard for office devices to talk

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Proprietary router features lock users into one vendor

By Maureen Molloy
Senior Editor

The internetwork industry has long been credited with leading the charge toward open networking, its members quick to work toward interoperability.

But of late, router vendors have been increasingly adding an array of advanced, proprietary features to their gear. While users applaud the technical leaps, many complain these value-added features make it difficult to mix and match routers in expanding networks.

"Ostensibly, users see a movement toward open networking with protocols like [Open Shortest Path First] and, from that, they gain a false sense of security," said Kevin Tolly, president of InterLAB, a Sea Girt, N.J.-based network test laboratory and consultancy. "It is largely a smoke screen because now the big differentiators — why a user will choose Vendor X over Vendor Y — are proprietary."

This is particularly true in the IBM arena, Tolly said, where ven-

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WilTel details plans for ATM management service

SNMP-based system to manage equipment and links; could give carrier edge in fledgling market.

By Bob Wallace
Senior Editor

TULSA, Okla. — WilTel last week detailed plans to provide an SNMP-based net management system early next year that will enable users to control the carrier's Asynchronous Transfer Mode (ATM)-based service.

The system will manage on-site equipment and long-haul links supporting the ATM service, expected to debut in the fourth quarter. WilTel is the first of the major carriers to discuss plans for an ATM management service, which will be generally available in the first quarter of 1994.

"ATM features will be pretty much standard," said Terry Lindsay, vice president of technology development for WilTel. "Network management is where we can differentiate ourselves from other [carriers]."

Added Daniel Briere, president of TeleChoice, Inc., a Verona, N.J., consultancy, "Users are going to demand management tools and make them a high priority when considering ATM. The fact that WilTel could have a system out there [first] could give them a big advantage."

WilTel users briefed on the

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Clipper Chip foes denounce scheme over cost issues

Vendors and users rail against encryption plan.

By Ellen Messmer
Senior Correspondent

GAITHERSBURG, Md. — Users and vendors last week blasted the federal government's Clipper Chip encryption scheme, saying it will be expensive to implement because it does not abide by international encryption standards.

Clipper Chip, the chip-based private-key encryption system developed by the National Security Agency (NSA), came under fire from users like Citibank, N.A. and industry trade groups during the Computer System Security and Privacy Advisory Board meeting here at the National Institute of Standards and Technology (NIST).

Clipper Chip is designed with a key escrow system that will allow the U.S. government to decrypt messages during surveillance actions. President Clinton, citing the need to balance individual privacy rights with law enforcement and security concerns, last April ordered NIST to make Clipper Chip a federal purchasing standard in six months.

The decision will have a big impact on the banking community, which leans toward the government's choice of encryption

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MCI to link regional nets with $200m ATM backbone

By Bob Wallace
Senior Editor

WASHINGTON, D.C. — Rather than risk paying higher rates for capacity on the National Science Foundation Network when it goes commercial next year, eight regional computer network operators last week enlisted MCI Communications Corp. to build them an ATM-based backbone net.

The net operators, dubbed the Corporation for Regional and Enterprise Networking (CoREN), plan to pay the $200 million tab for the five-year deal by selling to academic and commercial users net services, including voice, purchased in bulk from MCI.

"We decided it would be cheaper to aggregate our traffic and migrate to an MCI [Asynchronous Transfer Mode] net than pay to use the NSFNET backbone," said Michael Stamen, CoREN's interim president. "And we'll be able to extend to members incentives [on voice services] that we can't offer now."

CoREN includes San Francisco Bay Area Regional Research Network, Committee on Institutional Cooperation Network, Midwestern States Network, Northwestern States Network, New

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Briefs

Personalized news at your doorstep. Motorola, Inc. last week announced a news service for users of its Electronic Mail Broadcast to A Roaming Computer (EMBARC) one-way wireless messaging system. Called HeadsUp, the news service delivers to subscribers each morning news briefs from a choice of 24 categories, such as telecommunications and emerging technologies. Subscribers can get the full text faxed to them or dial into an EMBARC mailbox and download it. The service costs $45 per month to receive two categories of briefs.

USL establishes Tuxedo conformance tests. Unix System Laboratories, Inc. (USL) last week announced a conformance and branding program for its Tuxedo transaction processing system. The program will ensure that licensed Tuxedo products share a consistent set of application program interfaces and are portable across multiple platforms. To verify conformance and receive a Tuxedo brand, Tuxedo licensees must complete a series of self-certification tests, which will be audited by USL. Currently, there are more than 50 Tuxedo resellers and OEMs. The first Tuxedo brand products should appear by late August.

Apple set for tests with carriers. Apple Computer, Inc. last week announced that BellSouth Corp. has agreed to test Apple screen phones that support facsimile, voice messaging and interactive services. Trials begin later this month in Orlando, Fla., with a test of home banking services. Apple is also teaming with Ameritech to tie the Apple Newton personal digital assistant to Ameritech's voice and fax messaging services, enabling users to employ Newton to retrieve messages. The first Newton is scheduled for release this summer.

Artisoft axes its founder. Artisoft, Inc., the Tucson, Ariz.-based maker of the LANtastic peer-to-peer network operating system, last week dismissed founder C. John Schoof II, its chairman and chief executive officer. The company named William Keiper, hired early this year as president and chief operating officer, as CEO, and said it may name a new chairman at its board meeting this week. Schoof, who started Artisoft in 1982 and developed many of its key products, owns 20% of the company. Artisoft disappointed analysts with a sharp decline in net income to $333,000 for the third quarter ended March 31, down from $3.6 million for the same period the year before.

Cable giants to build advanced nets. Time Warner Cable and Tele-Communications, Inc. (TCI) last week created a joint venture firm that will work with suppliers to develop interoperable hardware and software for broadband cable television networks that will deliver an array of services to homes and businesses. The firms plan to offer high-speed data, imaging and videoconferencing services to businesses and interactive shopping services to homes. TCI is the nation's largest cable company, serving 10.2 million customers in 49 states, while Time Warner is second with 7.1 million customers in 36 states.

SynOptics stock plummets. SynOptics Communications, Inc. found itself reeling last Friday when its stock price fell 12¼ points after Salomon Brothers, Inc. downgraded its investment code on the stock from buy to hold. Among the reasons the investment firm cited for its decision were an artificially high price on the stock, product shipments that exceed bookings this month and a high percentage of revenue growth from low-end products with small margins.

CONTACTS

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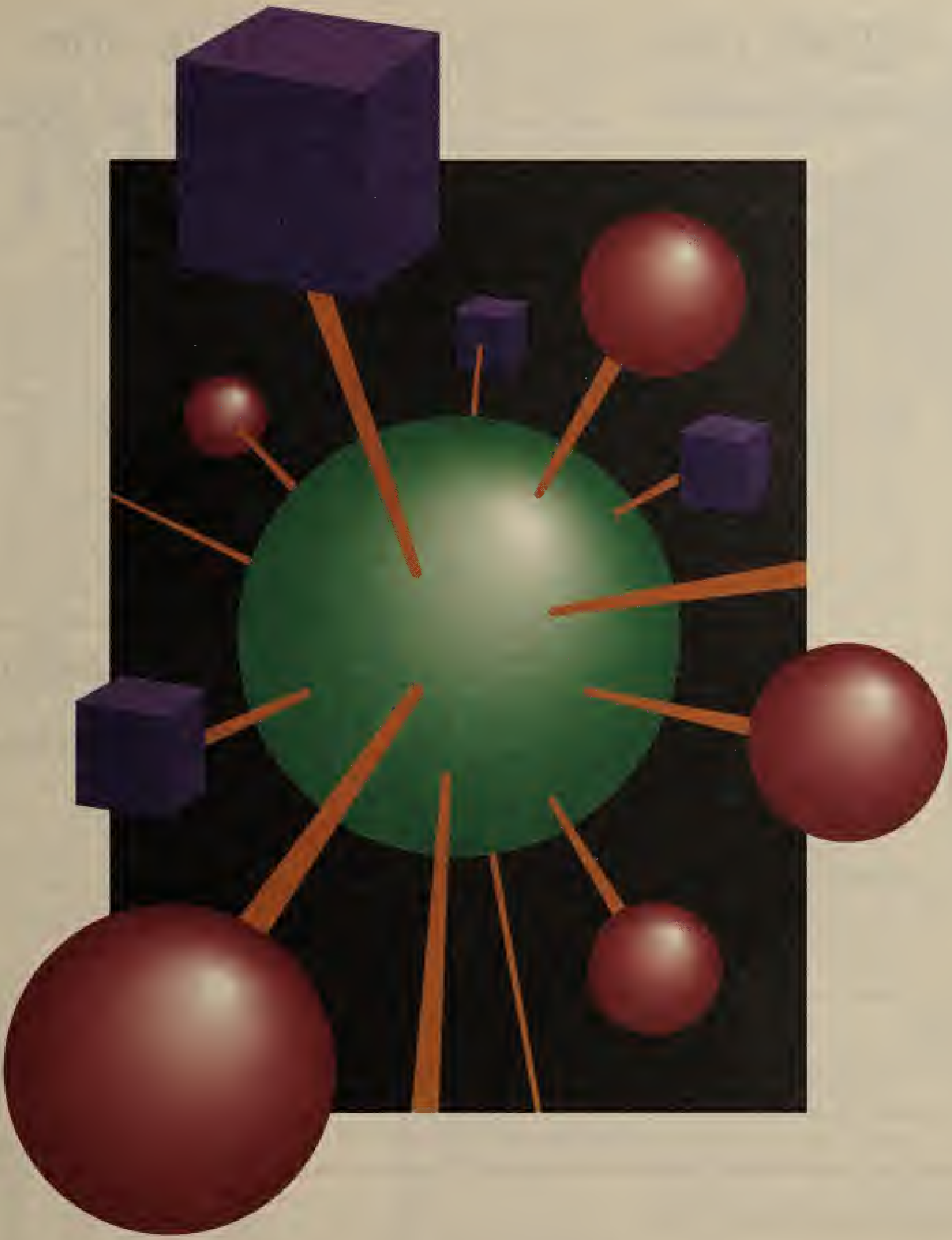

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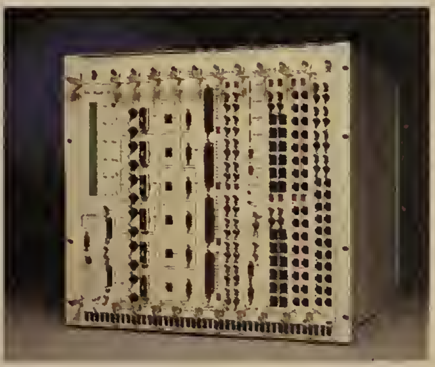

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3Com router upgrade eases internetwork management

By Maureen Molloy
Senior Editor

SANTA CLARA, Calif. — 3Com Corp. last week announced enhancements to its high-end NETBuilder II router that will ease the headaches of configuring and managing large internets.

The enhancements will help users make more efficient use of wide-area network bandwidth, boost net security and enable multiple protocols supported by the router to coexist more harmoniously.

Key among the new features in 3Com's NETBuilder Internetworking Family 6.0 software are Classless Inter Domain Routing (CIDR) and Inverse ARP, both of which simplify Transmission Control Protocol/Internet Protocol address maintenance.

CIDR supports so-called supernetting, which allows an administrator to logically group multiple router addresses into a single TCP/IP address. Because one designated router handles broadcasting for subordinate routers in its area, the TCP/IP address traffic broadcast across the network is minimized.

Inverse ARP is aimed at users that have deployed frame relay as their WAN. It provides dynamic mapping of router-based TCP/IP addresses to frame relay data link control identifiers (DLCI). Previously, users had to manually establish a connection between a TCP/IP address and a DLCI.

Randy Cosby, network manager at Texas Children's Hospital in Houston, will begin installing the new software on his 3Com routers beginning next week. He said router configuration is cumbersome, and he is looking for a way to ease the addressing and management burden on his ever-expanding internet.

"Routing, to put it bluntly, is painful. Anything that will make it a simpler process for us is a godsend. We'll soon be implementing a lot of [Internetwork Packet Exchange] and DECnet routing and will need it even more then," he said.

Policy-based routing

Another new feature of the 6.0 software is policy-based routing for TCP/IP, DECnet and Novell, Inc.'s IPX. This feature broadcasts available routes and services only to authorized routers, which enhances security.

Policy-based routing essentially provides a router with a list of trusted routers that spells out with which routers it can and cannot communicate. For security reasons, for example, a router at a remote site can be given access to a central-site host but barred from communicating with other remote sites.

Another new feature, called BOOTP Helper, will enable one device to boot up another across a router internet. Previously, a server, for instance, could only boot up a workstation if the two were located on the same local-area network.

Simplified coexistence

3Com's 6.0 software also includes a DECnet Phase IV-to-Phase V gateway that will simplify user migration to the next-generation Digital Equipment Corp. protocol.

Typically, users have to manually convert addressing schemes, routing algorithms and DECnet area topologies. 3Com's DECnet Phase IV/V gateway automatically translates addresses and routing algorithms. Phase IV and V stacks run side by side so Phase V routing can be added without requiring Phase IV nodes to be reconfigured.

Finally, 3Com has added Integrated Intermediate System to Intermediate System (IS-IS) support on the NETBuilder router, where TCP/IP and Open Systems Interconnection traffic share a common routing layer.

Integrated IS-IS is the router-to-router protocol for OSI's Connectionless Network Layer Protocol (CNLP) and also supports the routing of TCP/IP traffic. Giving Integrated IS-IS the ability to simultaneously handle CNLP and TCP/IP reduces the complexity of managing a net by allowing data to be carried in a single interrouter protocol.

All features are available now. Pricing ranges from $350 to $2,000, depending on the software features provided.

3Com: (408) 764-5000. ◪

IBI to offer series of SQL gateways

By Wayne Eckerson
Senior Editor

NEW YORK — In response to customer demand, Information Builders, Inc. (IBI) next week will unveil a series of software gateways designed to provide links between client applications and specific databases.

The gateways are database-specific versions of IBI's Enterprise Data Access (EDA)/SQL client/server software packaged and sold as separate products. EDA/SQL provides access to more than 50 databases and file structures on 35 platforms.

"Customers have said EDA/SQL is great, but they don't need all its capabilities," an IBI spokesman said. "They asked if we could break off parts of EDA/SQL and provide them as point-to-point gateways."

The new gateways, which reside on IBM hosts, consist of database-specific drivers and a slimmed down version of EDA/SQL server software.

The IBI gateways will provide access to 13 different databases that run on IBM MVS and VM platforms. These include: IBM's VSAM and IMS, Cincom Systems, Inc.'s Total and Supra, Computer Associates, Inc.'s CA-IDMS/R and CA-Datacom/DB, Computer Corp. of America's Model 204,

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Xyplex preps per-port configuration feature

By Skip MacAskill
Senior Writer

LITTLETON, Mass. — Xyplex, Inc. this week will introduce new modules for its intelligent hub that feature per-port configuration switching capabilities.

Configuration switching in the Network 9000 Intra-networking Hub will let administrators handle moves, adds and changes from a central site without physical change to the wiring system or trips to the wiring closet.

The 250 Series of Port Switching Ethernet Concentrator hub modules include 10Base-T and 10Base-FL devices. The 251 supports 12 10Base-T ports via a 50-pin telephone-type connector, while the 253 offers 12 10Base-T RJ-45 connections. Both provide a standard attachment unit interface port for linking to an Ethernet backbone.

The 254 Fiber Optic Port Switching Concentrator module provides 12 ports conforming to the IEEE 10Base-FL standard for transmitting Ethernet traffic over fiber-optic links.

From a central management console, an administrator can switch any port on the modules to any of three internal Ethernet backplanes in the 9000, allowing on-the-fly reconfiguration to ease the burden on overloaded segments.

The announcement is a first step toward providing Ethernet switching. The company will work with Artel Communications Corp. for that technology, although neither company would offer more details.

A study from Dataquest Worldwide Services Group shows that network moves, adds and

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Banyan mgmt. wares offer SNMP, NetView support

By Christine Burns
Staff Writer

AMSTERDAM — Banyan Systems, Inc. last week announced two products that enhance management of VINES local-area networks from SNMP management consoles and a third that gives VINES servers their first link to IBM's NetView.

Banyan's Simple Network Management Protocol Agent Release 2.0 and the VINES Assistant 3.0 software together let VINES servers support advanced SNMP functions, including the ability to ship unsolicited alerts to a central console when predefined thresholds are exceeded. The new NetView Service Point software lets users monitor and control VINES servers from a NetView console.

"Banyan's product line has been strong in many areas, but network management has not been one of them," said Grace Carr, vice president of marketing at Banyan reseller Syntrex Technologies, Inc. in Valley Forge, Pa. "We're pleased to see the focus on the net management arena."

SNMP Agent Release 2.0, which runs on VINES servers, offers new support for SNMP TRAP and SET commands, said William Johnson, vice president of corporate business development at Banyan.

The TRAP support gives the agent the ability to automatically ship alerts on 82 network events to the SNMP console, as opposed to having the console poll remote agents.

The SET command allows network managers to define from the SNMP management console the conditions under which they would want an alert to be generated. For example, administrators may want to be notified if 100 errors occur in a particular LAN segment within an hour, or they may want to know if a user tries to log on unsuccessfully numerous times.

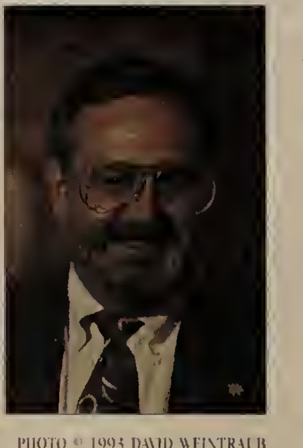

PHOTO © 1993 DAVID WEINTRAUB

Johnson

VINES Assistant 3.0 software, a collection of management utilities that run on VINES servers, has been enhanced to recognize the 82 types of unsolicited alerts the agent can generate from the server's directory, file, print, security and other services. VINES Assistant then reports the alerts to whichever user or group of users has been previously designated, either via an audible alarm or through an electronic mail message sent to the management console.

Both SNMP Agent Release 2.0 and VINES Assistant 3.0

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DEC readies new wireless LAN wares

By Jim Duffy
Senior Editor

ATLANTA — Digital Equipment Corp. this week is expected to expand its offerings in the burgeoning markets of wireless communications and groupware.

According to sources briefed by the company, DEC will unveil new wireless local-area network products and DECtransporter, software that enables personal computer applications to access remote resources over a variety of Transmission Control Protocol/Internet Protocol-based networks, including wireless nets.

DEC will also unwrap additions to its TeamLinks groupware product suite, including a new packaging option for the software as well as support for its All-In-1 Integrated Office System (IOS) servers and Apple Computer, Inc. Macintosh clients. DEC officials would neither confirm nor deny details of the announcements.

The DECtransporter line consists of two products, DECtransporter for MS DOS/Windows, and DECtransporter for OpenVMS VAX. The MS DOS/Windows product resides on mobile Intel

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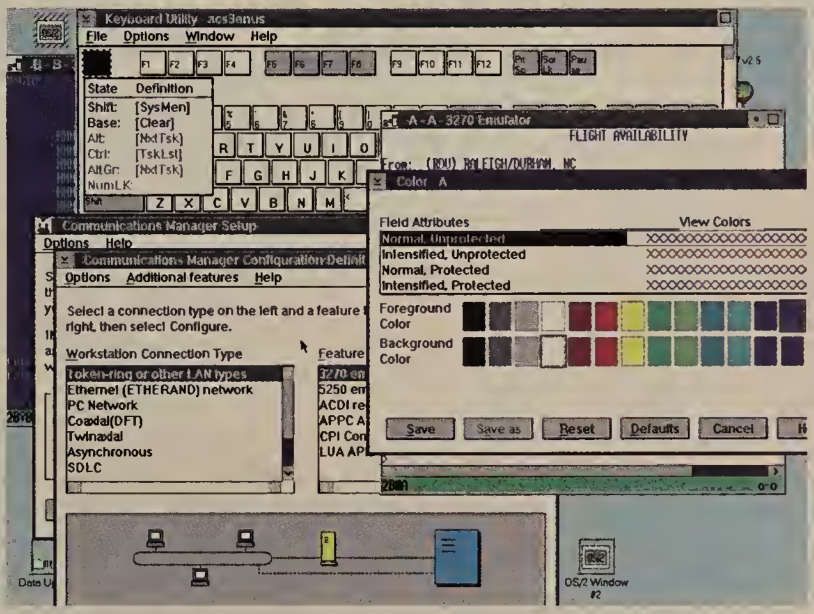

State Definition
Shift: [SysMen]
Base: [Clear]
Alt: [NxtTsk]
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Clipper Chip criticized

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standards. Many banks have to communicate electronically with the Federal Reserve System and will likely have to use Clipper Chip once the Fed adopts it.

"The cost of the chip is a minute part of the [overall] cost," said Sandra Lambert, Citibank vice president and director of information security, and a member of the advisory board. Having to support the Clipper Chip on its global net as well as international encryption standards will require added personnel and hardware investment.

PHOTO © 1993 WALTER CALAHAN
Kammer

The Computer Business Manufacturers Association, Software Publishers Association and Open Software Foundation, Inc. said the government's proposed standard would force vendors to create new security products incompatible with existing standards. Few vendors see a big market for Clipper Chip.

Motorola, Inc. Chief Executive Officer George Fisher stated, "The technology will not be cost-effective, will not be usable for computer communications over packet-switched nets, nor will it solve the problems the law enforcement agencies expect it to solve."

NIST Deputy Director Ray Kammer said the government is considering banning all other encryption and making Clipper Chip mandatory.

Although the public knew nothing of Clipper Chip before Clinton's April announcement, AT&T knew about the upcoming new standard at least a year and a half ago, government officials admitted last week. Board member Cris Castro, director of consultancy ManTech Strategic Associates, Inc., accused AT&T of making a "secret deal" with the NSA over Clipper Chip. Castro said AT&T agreed to substitute Clipper Chip for the Data Encryption Standard (DES) algorithm planned for a telephone security device in exchange for a sole-source contract with the Department of Justice.

Clint Brooks, NSA special assistant to the director for the Clipper Chip key escrow project, acknowledged that AT&T came to the NSA saying it had developed a better version of the DES that it would implement in its new encryption device. The agency informed AT&T that Clipper Chip would be proposed as a federal standard. AT&T switched its support to Clipper Chip.

Brooks

Lambert

The Department of the Treasury's FBI awarded AT&T a sole-source contract for several thousand of the telephone security devices without competitive bidding. But the NSA, AT&T and the FBI deny that AT&T won in exchange for dropping the DES in its encryption device.

"AT&T is the only one making these," said Barry Smith, congressional supervisory special agent at the FBI, explaining the FBI's decision.

AT&T told *Network World* it already had the Treasury contract when the Clipper Chip was announced in early April, but the FBI insisted last week that the contract was signed on June 1. NIST officials acknowledged that since the FBI has ordered AT&T Clipper Chip devices in advance of the standard being officially published, multivendor interoperability will be problematic because AT&T has implemented proprietary signaling and voice-coding schemes.

IBI to offer gateways

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NCR Corp.'s Teradata, SAP AG's SAP, SAS Institute, Inc.'s System 2000, IBI's FOCUS and Software AG of North America, Inc.'s Adabas.

IBI now offers gateways to IBM's DB2 and SQL/DS host databases.

The gateways can be accessed from any front-end application that incorporates IBI's EDA/SQL application program interface (API) or communicates with data access tools that support the API. Currently, there are 100 front-end applications and tools that can access EDA/SQL gateways.

These include Lotus Development Corp.'s 1-2-3 spreadsheets and DataLens data access tool, Microsoft Corp.'s Access database and Visual Basic development tool, and WordPerfect Corp.'s WordPerfect word processing software.

The gateways are available immediately and range in price from $63,000 to $97,500, depending on configuration. Customers that upgrade the gateways to full EDA/SQL server implementations will receive full credit for the cost of the gateways within two years from the time the gateway is installed.

IBI: (212) 736-4433.

Xyplex preps per-port feature

continued from page 4

changes are the second most time-consuming information systems function behind training/support. Configuration switching can eliminate that headache, said Michael Procopio, vice president of technical marketing at Xyplex.

"Instead of going to the next building, climbing three flights of stairs and accessing a wiring closet to move a cable, a net manager can be sitting at a desk and simply point and click to move the user to a different network," he said. Bytex Corp., LANNET Data Communications, Inc. and Chipcom Corp. — which pioneered the capability in 1991 — are the only other hub makers to offer this per-port functionality.

Andy Evans, a network technician for Plymouth State College in Plymouth, N.H., figures he can trim thousands of dollars from the school's net budget.

"Per-port switching represents a big cost savings for us," he said. "In each building, we can have student, faculty and administrative users; so in order to keep the traffic separate, I can simply assign users to the appropriate segment. I don't have to buy separate cards for each user or invest in routers to set up fire walls."

Xyplex: (508) 264-9900.

Microsoft claims the office

continued from page 1

to each other. Primarily, this is a way for all the devices to send and receive documents in the same way."

Providing office devices with a common interface to the widely used personal computer environment essentially turns that equipment into PC peripherals, extending their capabilities in new ways.

Even as it links office machines, Microsoft at Work blurs the distinctions between printers, scanners, copiers and fax machines. Fax machines already include all the elements of a printer, scanner and copier, and this type of connection will let it assume any role, depending on the situation.

For example, users could employ a fax machine to scan a document, transfer the file to a PC and then transmit it to a remote laser printer or group of printers operating as fax machines. While some of this capability is available now, linking it all to the familiar Windows interface makes it easy to use.

"This is the integration of the world as we know it," said one fax vendor who supports the new standard but requested anonymity.

But Casey Dworkin, general manager of Personal Technology Research, a market research firm in Waltham, Mass., said Microsoft may be reaching too far. "I'm not sure the market is crying out for that," Dworkin said.

In an extension of the Telephone application program interface announced in May, the new architecture will also provide graphical access to telephone company-based services such as voice mail, fax mail and electronic mail.

The final component of Microsoft at Work is designed to receive, display, store and forward documents created by pen-based mobile devices such as Personal Digital Assistants and linked with wireless services.

Microsoft at Work will allow applications to be very user-friendly in a mobile environment, said Jeff Brown, vice president of sales and marketing for the Wireless Data Group of McCaw Cellular Communications, Inc. in Kirkland, Wash., one of the companies supporting the new standard.

Other players expected to be on hand to back the Microsoft announcement here include Compaq Computer Corp., Ericsson Business Communications, Inc., Hewlett-Packard Co., Motorola, Inc., Ricoh Co., Ltd., Rockwell International Corp., Sprint Corp., US West Communications, Inc., U.S. Robotics, Inc. and others.

According to analysts, Microsoft at Work represents an aggressive answer to Novell, Inc.'s Global Communications Manager and General Magic's TeleScript, which is backed by Apple Computer, Inc., AT&T, Matsushita Electric Corp. of America, Motorola, Philips Industries, N.V. and Sony Corp.

"There's going to be a battle for the hearts and minds of customers," said Stan Schatt at InfoCorp. Microsoft wants to control everything, Schatt said.

Corrections: Digital Equipment Corp. is reducing the price of its TCP/IP Services 2.0 product by 25% only through June 30. A story in the May 31 issue erroneously stated that a new version of the product would be priced 25% less than Version 2.0.

Addendum: A recent news brief should have noted that Computer Networks Technology Corp. was among the network companies named to *Business Week's* list of the fastest growing small companies in the U.S.

MCI to link nets with ATM

continued from page 2

York State Educational Research Network, Southeastern Universities Research Association Network and Southwestern States Network.

CoREN members currently offer Transmission Control Protocol/Internet Protocol service at speeds up to 45M bit/sec through more than 1,050 service entry points to over 2,000 U.S. sites. "This is as large of a buying cooperative as there is," Stamen said.

MCI beat out Sprint Corp., Performance Systems International, Inc., Advanced Network & Services, Inc. and others for the lucrative deal. Stamen refused to say why MCI was chosen over competitors or when CoREN would begin using the planned MCI ATM network.

Stamen also declined to discuss details of the ATM network, such as which switches will be used and where they will be located.

He did say, however, that the network would only be used to link existing regional nets, not replace them. There will still be links from each regional net to the Internet.

The backbone will support dedicated access at 56K and 1.544M bit/sec dedicated links, plus frame relay and Switched Multimegabit Data Service.

"The service that a school would use to access the network would depend on the type of application or applications they wish to support," Stamen said. "It's a business decision, not an architectural one."

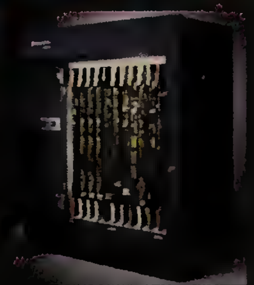
The MCI voice services CoREN will include 800 and Virtual Network, the carrier's virtual voice net offering.

The ATM backbone net will support high-bandwidth applications, which are emerging quickly within academia. "We're seeing an increasing demand for multimedia, videoconferencing and imaging," Stamen said. "We envision the backbone moving to 155M bits in the next five years."

Although colleges and universities will comprise the bulk of its customer base, Stamen stressed that business and other commercial users will be able to use the net. "We will actively and aggressively sell network services to commercial users."

He would not say when CoREN will begin selling services over the network or what it would charge for the offerings.

Breathe the fire of ATM into your existing Ethernet network.



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Ungermann-Bass

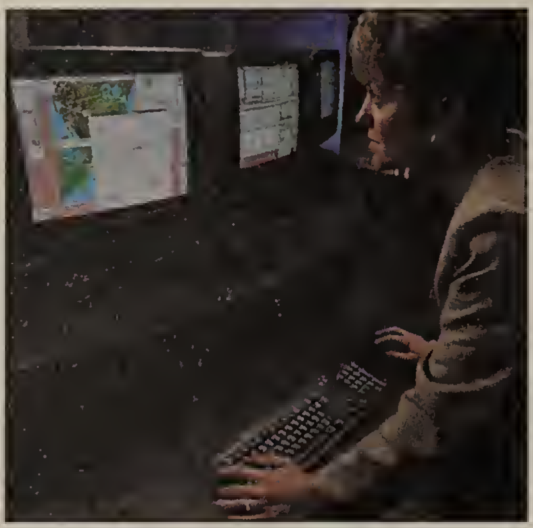
Your global network integration partner

WilTel details ATM plans

continued from page 2

system agreed. "The ability to get into the network and manage the service is critical to the success of ATM," said Coyne Gibson, an information technology manager with Convex Computer Corp., a supercomputer maker in Dallas. "Other carriers will have to come up with comparable systems."

WilTel's management system runs on Intel Corp. 80486-based computers and a graphical user interface based on NeXT Computer, Inc.'s NeXTStep software. WilTel will port the software to other platforms later. The system will manage devices such as routers, ATM switches, multiplexers, terminal adapters and other equipment on local-, metropolitan- or wide-area ATM nets. It will initially handle alarm, performance, connection and traffic management and, later, a billing management function.



WilTel's planned ATM net mgmt. system

The software will tie into the WilTel network over a virtual circuit, which can be supported on an existing dedicated access link.

"Alarms are put into one pile, which lets users look across devices in alarm management and do correlations of events," Lindsay said.

The system will give users raw performance data and let them send Lotus Development Corp.-type formulas to WilTel, which the carrier will use to assess service performance. "We're doing this because nobody can agree on what is a meaningful parameter for performance management," he said.

The software will enable users to set up ATM circuits of varying bandwidth between any sites and would also track the number of ATM cells sent over a network. "This would be a major help to users if we decide to bill on a per-cell basis," Lindsay said.

Planned enhancements will include the ability for users to submit and track trouble tickets and set up a hierarchy of account codes that network managers could use to bill back end users or departments for service use.

Features lock users into vendor

continued from page 1

dors are scrambling to make router-based backbones an attractive platform for wary Systems Network Architecture users. To woo this huge and largely untapped market, router vendors are adding proprietary features to provide the reliability and data integrity SNA requires.

Some of these vendor-specific features include protocol prioritization, local termination of Logical Link Control packets, Network Basic I/O System name caching as well as bandwidth optimization schemes such as data compression.

Nick Lippis, a principal at Strategic Networks Consulting, Inc. in Rockland, Mass., said users that want to take advantage of such features have to do business with a single vendor.

"We recommend single-vendor solutions all the time because, today, that's the only way to go," he said. "Users that mix and match different vendors' routers will drop down to a lowest common denominator level of interoperability, and that's a big [performance] penalty to pay for having a multivendor internet."

John McConnell, vice president of Infonetics Research, Inc. in Boulder, Colo., said the proprietary nature of internetworking today is as much a function of the industry's youth as it is the vendors' desire to lock users into a proprietary approach to networking.

But both McConnell and Lippis said that as more users demand options such as prioritization, it will become so ubiquitous that vendors will see little value in keeping it proprietary.

"There just isn't enough user pressure yet to force a change," McConnell said. "But once it becomes a large enough problem — and it will — the industry as a whole will feel the pain and you'll see a trend back toward standards."

There are already signs of a migration toward some "standard" solutions. While nearly all vendors have developed proprietary ways of encapsulating SNA data in Transmission Control Protocol/Internet Protocol packets for transport over an internet backbone, most have now agreed to standardize on IBM's Data Link Switching (DLSw) method, now a proposed Internet Engineering Task Force standard.

Al Teasdale, senior technical analyst at the Canadian-based BC Systems, is collapsing BC's SNA net onto its Cisco Systems, Inc. router-based internet. At sites with a large concentration of SNA gear, Teasdale said he was looking to deploy IBM's 6611 router using DLSw and to have that traffic feed back to high-end Cisco AGS+ routers at BC hub sites. But the AGS+ and 6611 are not compatible, forcing the company to install 6611s at the hub sites, as well. "It costs us a significant amount of dollars because we end up having to buy two routers at each end to make it work," he said.

Cisco has since announced its intentions to support DLSw, which would ease the interoperability glitches BC faces.

Many of the router vendors acknowledged the problems associated with proprietary options, promising they are only temporary.

Kurt Bauer, director of marketing at Advanced Computer Communications said the company specifically developed its data compression capability in software so it can adopt the compression standard when it is available.

"The only way the internetwork market can continue to thrive is if users can interconnect as many different routers as possible," said Tony Spielman, director of internetworking at Network Systems Corp.

A mixed blessing

While users welcome the growing technical enhancements on routers, many lament that the advanced features often come at the expense of multivendor interoperability because of their proprietary nature.

Feature	Status
Interrouter protocol for serial links	Point-to-Point Protocol
Interrouter protocol	Open Shortest Path First and Routing Information Protocol
TCP/IP encapsulation of SNA data	Proposed standard based on IBM's Data Link Switching
Protocol prioritization	Vendor-specific
Local termination of SNA sessions	Vendor-specific
NETBIOS	Vendor-specific
Data compression	Vendor-specific

GRAPHIC BY TERRI MITCHELL

Banyan wares offer support

continued from page 4

run on all versions of VINES 5.X and Enterprise Network Services (ENS) for NetWare, which is a set of net services that can be used in VINES and Novell, Inc. NetWare environments. The products support connectivity to SNMP management stations via communications protocols, including User Datagram Protocol/Internet Protocol (UDP/IP), AppleTalk and VINES IP. They also work with SNMP platforms from AT&T, Cabletron Systems, Inc., Hewlett-Packard Co. and IBM.

Banyan's SNMP Agent Release 2.0 costs $695 and will be available later this month. The price of VINES Assistant 3.0, expected to be available in July, is $699.

For users looking to manage VINES 5.5 servers from their Systems Network Architecture mainframes, Banyan's NetView Service Point converts VINES management data into a NetView-compatible format and ships it to the NetView host via the SNA net. NetView Service Point also supports the NetView RUN command, which allows the manipulation of the VINES system from a central NetView management console.

"Having NetView be the central control point that allows users to remotely monitor their entire system is a capability that a significant piece of Banyan's customer base would be interested in," said Lee Doyle, director of LAN research at the International Data Corp. consultancy.

NetView Service Point costs $2,195 and will be available in August.

Banyan: (800) 828-2404.

Cabletron stacks deck in its favor

continued from page 1

net devices. Token-ring versions are scheduled to debut later this year.

The Ethernet HubStack family features an intelligent hub that can manage four other units — supporting a total of 130 users — as one logical repeater. The intelligent MicroMMAC comes in 12- and 24-port 10Base-T Ethernet versions and handles all management and bridge/routing for attached hubs.

Powered by an Intel Corp. i960 processor, the 12-port MicroMMAC offers 12 RJ-45 connections and one Ethernet Port Interface Module (EPIM) connection that can be configured as a coaxial cable, fiber-optic or attachment unit interface port. The 12-port model can be upgraded in the field to a 24-port version.

The hub supports the Simple Network Management Protocol, as well as the Ethernet Remote Monitoring Management Information Base (MIB) and SNMP MIB II. By supporting Cabletron's Distributed LAN Monitor, the MicroMMAC can perform proxy polling of all end nodes attached to the stack, which reduces net management overhead.

The MicroMMAC can also support any of the BRIM expansion cards that Cabletron rolled out last month (*NW,* May 3, page 1). The BRIMs offer bridge/routing for Ethernet, token-ring, Fiber Distributed Data Interface, Asynchronous Transfer Mode and wide-area network environments. They incorporate a data service unit/channel service unit for direct connection to T-1 lines.

The MicroMMAC has two communications ports for serial connections for local or remote support of asynchronous VT-100 terminals using the Serial Line Internet Protocol.

The unmanaged Stackable Ethernet Hub (SEH) comes in 12- and 24-port versions, with the 12-port model upgradable to the higher density unit. Both hubs support RJ-45 connections as well as the EPIM ports.

In July, Cabletron will offer an SEH with Intelligence (SEHI), which will provide SNMP management capabilities. The SEHI will manage as many as four SEH units and can be upgraded to a MicroMMAC.

"Cabletron would be the first to offer integrated bridge/routing in the stackable platform, but [the devices] would have to be priced competitively because cost is the top concern of [most] users looking at stackables," said Michael Howard, president of Infonetics Research, Inc., a consultancy in San Jose, Calif.

Ethernet HubStack products are expected to ship within the next 90 days. MicroMMAC pricing ranges from $4,895 to $5,495, while the SEH ranges from $1,395 to $1,995. The SEHI will cost between $2,395 and $2,995.

Boundary routing

According to the sources, Cabletron will also announce by July its version of boundary routing. That routing technology — popularized by 3Com Corp. earlier this year when it announced its Boundary Routing System Architecture — is geared to remote office environments that are supported with a single WAN link.

Since there is only one path out of the remote office, the router does not require the intelligence of a conventional router, meaning unnecessary features can be stripped away to reduce cost and complexity.

Cabletron declined to comment on the announcements.

DATA NET ARCHITECTURES

NETWORK ARCHITECTURES, DATA NETWORK EQUIPMENT, STANDARDS AND ENTERPRISE NETWORK MANAGEMENT

Worth Noting

> "Our approach to [the Distributed Computing Environment] is very cautious. In the production environment, I don't want to be bleeding edge. I want somebody else to find the bugs."
>
> **Raman Khanna**
> Director of networking and
> distributed computing
> Stanford University
> Stanford, Calif.

Data Packets

Tantara Technologies, Inc. of Littleton, Colo., this week will unveil a low-priced network management tool that allows network administrators to quickly assess the status of active computers.

Called KnockKnock, the software runs on Sun Microsystems, Inc. SPARCstations. It displays information in real time on the operational status of devices connected to a network.

In addition, KnockKnock supports the Internet Control Message Protocol.

The software costs $500 and is available now.

Tantara: (303) 347-2957.

U.S. Robotics, Inc. of Skokie, Ill., has reduced prices on its entire line of WorldPort portable data/facsimile modems by as much as 49%.

The new prices for the WorldPort line range from $159 for a 2,400 bit/sec device to $499 for a 14.4K bit/sec data/fax modem for an Apple Computer, Inc. PowerBook personal computer. Previously, prices ranged from $229 to $699, respectively.

U.S. Robotics: (800) 342-5877.

(continued on page 12)

Codex unveils V.fast modem with synch compression

Offers alternative to switched 56K bit/sec, ISDN.

By Jim Duffy
Senior Editor

MANSFIELD, Mass. — Motorola Codex last week brought out a proprietary V.fast modem designed to provide a high-speed alternative to switched 56K bit/sec and Integrated Services Digital Network services.

The modem, called 326XFast-SDC, is said to support speeds of 72K bit/sec and above for synchronous data in full-duplex mode and 115.2K bit/sec speeds in asynchronous mode, both over standard voice-grade analog lines. The modem features a compression ratio of 4-to-1.

V.fast is an emerging CCITT standard that specifies data rates of 28.8K bit/sec over dial-up lines. The standard is expected to be ratified early next year.

The 326XFast-SDC is targeted at remote branch sites that are considering digital services for applications such as local-area network and host access, dial-up routing and router link backup. Motorola Codex claims its new device can accommodate these users more cost-effectively than switched 56K bit/sec or ISDN services.

Analysts agree.

"It seems like a good product to compete with ISDN and to keep their customers from going toward digital technology," said Lynda Fitzpatrick, market analyst at International Data Corp. in Framingham, Mass. "I think the price point for the product seems high, but when you compare it to digital technologies, it's reasonable."

The 326XFast-SDC costs $2,195 for a leased-line device and $1,895 for a dial-up version.

(continued on page 12)

Netlink adds FDDI option to SDLC converter offering

By Michael Cooney
Senior Editor

RALEIGH, N.C. — Netlink, Inc. last week announced the first Synchronous Data Link Control conversion product that will let users attach SNA/SDLC devices to an FDDI backbone network.

The SDLC Link Server Model 4 is an Intel Corp. 80486-based device with Netlink software that converts SDLC data streams into the Logical Link Control 2 (LLC2) format for transport across local-area networks and multiprotocol LAN internets.

The product previously supported the attachment of IBM gear, such as 3X74 controllers, to token-ring and Ethernet LANs, but now offers support for 100M bit/sec Fiber Distributed Data Interface LANs, as well. The FDDI support is provided by a new adapter to the Model 4 that Netlink is reselling from an undisclosed firm. New software is not required.

"The FDDI support on the Model 4 will be useful for users who are building FDDI backbones in multistory buildings or campuswide environments," said Michael Bowman, vice president of marketing for Netlink. "It also increases SNA users' options for migrating their older equipment to new technology."

The Link Server with FDDI support can be configured either as a dual- or single-access station and is fully compliant with ANSI FDDI standards, according to Bowman.

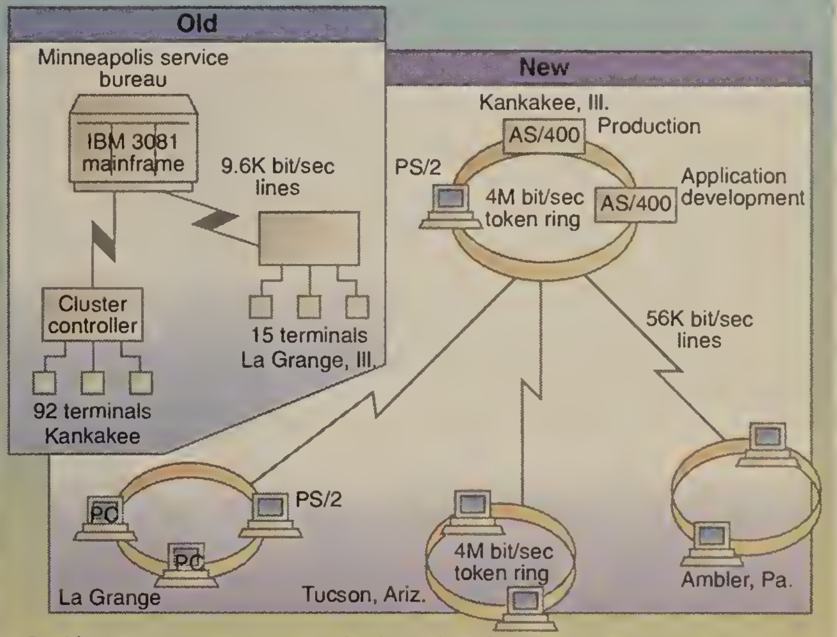
The base Model 4 supports four SDLC ports, with optional two- and four-port expansion cards available. It can be expanded to a maximum of 16 ports, each capable of supporting speeds of up to 64K bit/sec via its RS-232, V.35 and X.21 interfaces.

The Link Server can be managed by a host-based NetView network management system or a Simple Network Management Protocol manager such as IBM's NetView/6000 or Hewlett-Packard Co.'s OpenView.

The Link Server FDDI support will be available in the third quarter, and pricing will be announced then, Bowman said. The current Model 4 costs $17,995.

Netlink: (919) 878-8612. ◻

Henkel goes peer-to-peer



Seeking a more peer-to-peer, distributed environment, Henkel recently tossed out its mainframe-based network for one based on AS/400s and PCs. The new net has helped the firm double its business over the past 2 years.

SOURCE: HENKEL CORP., FUNCTIONAL PRODUCTS GROUP, GULPH MILLS, PA.
GRAPHIC BY SUSAN J. CHAMPENY

User bags big iron for client/server

Pulls plug on mainframe and installs peer-to-peer net; doubles business while IS costs hold steady.

By Michael Cooney
Senior Editor

KANKAKEE, Ill. — A chemical company here has eliminated its hierarchical terminal-to-host network in favor of distributed AS/400 mid-range machines and PCs that form a peer-to-peer net capable of handling client/server applications.

The new net has helped Henkel Corp.'s Functional Products Group here double its business from 1988 levels while keeping information systems (IS) expenditures about the same.

The Functional Products Group is part of the international conglomerate Henkel Group in Dusseldorf, Germany. The division provides specialty chemicals, such as industrial adhesives and coatings, as well as consumer products, such as detergents, shampoos and deodorants.

"If we had the old mainframe-based system today, the cost of our IS function would be at least double what it is now," said John McGinnis, manager of MIS for the Functional Products Group. "Plus, because users have access to information more easily and quickly, I think we are far more productive [with the new systems]."

Fifteen months ago, the group used a network based on an IBM 3081 mainframe and 9.6K bit/sec lines for order entry, customer service, inventory and financial applications. When the data processing operation that provided those services spun off into a separate company, McGinnis' group decided the cost of its services was too high.

"At that point, our priority was to find a system that could handle decentralization plus provide us with integrated manufacturing resource planning and inventory control applications," McGinnis said.

The company decided to install two large Application System/400s at its production facility here. The firm replaced its most important mainframe applications with Prism, a manufacturing resource planning application from Marcom Corp.

Henkel linked the two AS/400s to a 4M bit/sec token-ring local-area network. The firm also installed 4M bit/sec Novell, Inc. NetWare token-ring LANs at all of its remote sites as well as IBM's PC Support Program, which enables the personal computers to communicate with the AS/400s. The company then linked the LANs back to the AS/400s in Kankakee via 56K bit/sec wide-area network links. The net now com-

(continued on page 12)

Announcing the first network printer

Operating System	***Topology***
Novell Netware	**Ethernet/802.3* *Token Ring (4/16 Mbps)*
Microsoft® LAN Manager	**802.3* *Token Ring (4/16Mbps)*
Windows for Workgroups	**802.3* *Token Ring (4/16 Mbps)*
Windows NT	**802.3* *Token Ring (4/16 Mbps)*
IBM LAN Server	**802.3* *Token Ring (4/16 Mbps)*
AppleTalk	**LocalTalk* **EtherTalk*
*HP-UX***	**Ethernet*
*SunOS***	**Ethernet*
*Solaris***	**Ethernet*
*SCO UNIX**	**Ethernet*

*Standard in the HP LaserJet 4SI MX printer. **For operating HP-UX, SunOS or Solaris, a one-time purchase of $199 in configuration software is required. Adobe and PostScript are trademarks of Adobe Systems Inc. which may be registered in certain jurisdictions. Microsoft is a U.S. registered trademark of Microsoft Corporation. UNIX is a registered trademark of UNIX System Laboratories Inc. in the U.S.A. and other countries. +In Canada call 1-800-387-3867, Ext. 7299. © 1993 Hewlett-Packard PE12353

Multiple environments are no longer worlds apart. Even if you have Novell Netware on one network, HP-UX on another and EtherTalk on a third, the new HP LaserJet 4Si MX printer easily connects across platforms. Automatically.

The HP LaserJet 4Si MX printer comes out-of-the-box preconfigured for multiple environments. There's nothing more to do than plug-and-play. All interfaces are simultaneously hot, making switching so seamless, end-users won't even notice.

What's more, HP's LaserJet 4Si MX printer is ready to handle whatever needs come down the

that adapts to multiple environments.

pike. More operating systems? No problem. As your network system continues to evolve, the capabilities of this printer are no longer just impressive. They're indispensable.

The HP LaserJet 4Si MX printer is loaded with features that define state-of-the-art. HP's enhanced PCL5 and genuine PostScript™ Level 2 software from Adobe™ come standard. Printer environments are saved while switching. Setup is a cinch with network software utilities and drivers included in the box. And, if you need any reassurance about trouble-free operation, you have it in our Simple Network Management Protocol (SNMP) support.

At 17 ppm, this is the fastest LaserJet ever, with I/Os and RISC-based formatter capabilities matched to support its speed. It delivers impeccable 600 dpi print quality—thanks to HP's microfine toner and Resolution Enhancement technology. Plus, it comes standard with two 500 sheet input trays.

But what if you don't need the full capabilities of the HP LaserJet 4Si MX printer right away? HP offers another printer that's probably a perfect fit. The HP LaserJet 4Si printer delivers the identical 17 ppm performance and superb 600 dpi print quality. It also has room to grow. The two MIO expansion slots let you add HP JetDirect network interface or third party cards. And you can add on Adobe's genuine PostScript Level 2 software and SIMM memory modules, as you need them.

To find out more about the multiple-network HP LaserJet 4Si MX printer and the upgradable HP LaserJet 4Si printer just call 1-800-LASERJET, Ext. 7299.†
Capabilities this advanced make a world of difference—in any environment.

HEWLETT PACKARD

User bags big iron for client/server

continued from page 9

prises two AS/400s and more than 350 PCs in four sites (see graphic, page 9).

"We've built a client/server environment that now links everyone in the company — from the executives to the chemical engineers — on one integrated network," McGinnis said.

For example, the firm built client/server applications that let remote users capture order data locally from customers, combine that information with the user's historical data on the AS/400s and fill orders in a matter of seconds — a task that previously took weeks.

The same application can also predict demand and help the firm adjust manufacturing to maintain adequate inventory levels.

"These things could not be done in real time or as easily on the mainframe," McGinnis said. "The work we do on the AS/400s and the PCs in months would have taken years and more money to do on the mainframe."

According to McGinnis, the new network and AS/400s cost about the same as the upkeep for the mainframe. However, the company is saving money with the system in other ways. For example, it consolidated and integrated many functions that were duplicated in the firm's previously unconnected networks in Ambler, Pa., and Tucson, Ariz.

"Nothing was directly linked before. For example, the Ambler site would've had the same applications as La Grange, Ill.," he said. "We eliminated multiple versions of the same applications all over."

The new network also reduced response times to below a second from five or six seconds by bumping up from 9.6K WAN links to 56K bit/sec.

McGinnis said he sees the new net environment as fertile ground for growing more client/server applications.

"We are working on applications that will use the information available throughout our network to build improved scheduling and order processing applications," McGinnis said. "We are using this technology as a new catalyst for our future growth." ◘

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EMBARC℠
By MOTOROLA

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Data Packets

continued from page 9

Motorola UDS of Huntsville, Ala., recently announced a V.32bis 14.4K bit/sec modem with built-in 14.4K bit/sec facsimile capabilities.

The Motorola UDS V.3257 modem features built-in storage capacity for 50 user passwords, a supervisory interface to Motorola UDS' LocalView management system and support for the Unix-to-Unix Copy Program modem-spoofing protocol for faster data transmission.

The V.3257's Group III fax support can send and receive a document at speeds ranging from 2,400K to 14.4K bit/sec.

Prices for the Motorola UDS V.3257 data/fax modem start at $945.

Motorola UDS: (205) 430-8000. ◘

Codex unveils V.fast with compression

continued from page 9

There are some caveats for users to look out for, however. The 326XFast-SDC compresses the headers of data packets, which rules out their use with services such as frame relay and X.25 packet switching.

Also, the 326XFast-SDC requires a forklift upgrade for users of Motorola Codex's 1-year-old 326XFast modem. That proprietary V.fast device, the first in the Motorola Codex V.fast line, does not support synchronous data compression, thereby limiting synchronous throughput to 24K bit/sec *(NW,* April 27, 1992, page 13).

The modems support modified implementations of the V.42 and V.42bis error correction and data compression standards, Motorola Codex said. They will be available later this month.

For users wanting digital services, Motorola Codex also last week rolled out the 3512 Data Service Unit for access to leased 56K bit/sec digital circuits.

Targeted for branch office router-to-router applications, the 3512 supports multipoint time-division multiplexing for running point-to-point router traffic alongside IBM Systems Network Architecture and other nonroutable data.

The 3512 also features an extended range capability for operation over lengthy telephone company loops, V.32bis single-line restoral and an option to engage alternate restoral devices and services, such as 326XFast modems and switched 56K bit/sec and ISDN lines.

The 3512 costs $850 for a nonmanaged version and $1,295 for a manageable device. They are available now.

Motorola Codex: (508) 261-4000. ◘

LOCAL NETWORKING

LAN HARDWARE, NETWORK OPERATING SYSTEMS AND LAN MANAGEMENT

Worth Noting

"What we really need is a symmetric multiprocessing version of NetWare to be truly effective in large-scale environments where we're moving information down to the LAN from a mainframe."

Paul Bandrowski
Technology manager
Sara Lee Corp.
Chicago

Netnotes

Madge Networks, Inc. last week introduced Workstation Manager, software that will let administrators manage DOS-based machines on token-ring local-area networks.

The Workstation Manager package consists of a client-resident program and a central console-based application. The client piece is a 24K-byte terminate-and-stay-resident (TSR) program within each DOS machine.

For a limited time, Madge Networks is offering Smart Carton, whereby users receive the Workstation Manager software free with the purchase of 20 packs of the company's Madge Smart 16/4 Ringnode token-ring adapters. By itself, Workstation Manager is available now for $395.

Madge Networks: (800) 876-2343.

Shiva Corp. this week will begin offering a series of free Remote Networking seminars that will run through June. The seminars will explain how to provide full net access to Apple Computer, Inc.'s Macintosh and personal computer users in remote offices.

Shiva: (800) 828-2754.

Dataproducts preps Virtual Printer Technology wares

VPT designed to ease network printing problems.

By Fredric Paul
Senior Editor

WOODLAND HILLS, Calif. — Dataproducts Corp. next week is expected to announce its new Virtual Printer Technology (VPT) that lets a single printer support multiple network protocols and as many as 64 predefined configurations tailored for specific user groups.

With VPT, a single printer can support separate network addresses and default configurations for each user or group of users it serves. The technology is designed to reduce network printing problems, which currently account for almost 50% of trouble calls to network administrators, according to Dataproducts.

The company will also introduce two printers — the LZR 1850 and LZR 2080 — that incorporate VPT.

The proprietary VPT gives users the benefits of individual printers while giving network administrators more flexibility and control, a company spokesman said. A printer should always be in a known, predictable state, with the appropriate fonts and forms always available, the spokesman said. Autoemulation schemes used in other network printers can fail as much as 10% of the time, the company said.

Network administrators use VPT to assign access to the various virtual printers for individuals or work groups. They also set up the different printer configurations. Users get access only to the configurations they need, including such settings as paper size, resolution, default page description language and network protocol.

Virtual Printer 1, for example, might be configured for PostScript, portrait mode, resolution of 800-by-800 dots per in. and letter-size paper. Virtual Printer 2, on the other hand, might be set up for Hewlett-Packard Co.'s

(continued on page 15)

Novell adds wide-area, bridging features to router

By Caryn Gillooly
Senior Editor

SAN JOSE, Calif. — As expected, Novell, Inc. this week will enhance its internetworking line, adding wide-area support and bridging capabilities to its existing router.

The new NetWare MultiProtocol Router (MPR) Version 2.1 will support IBM's source route bridging (SRB) protocol to let users bridge Systems Network Architecture and Network Basic I/O System data between token-ring local-area networks. The new MPR Plus 2.1 includes all the features of MPR 2.1 but also provides wide-area networking capabilities previously found in the company's NetWare WAN Links product (*NW*, May 24, page 2).

Like Novell's existing router, MPR 2.1 and MPR Plus 2.1 are software-only products that can either reside in a NetWare 3.11 server or a separate personal computer running Novell's NetWare Runtime.

According to Navindra Jain, vice president and general manager of Novell's Network Management and Internetworking Products Division, the SRB capabilities give users some distinct advantages.

Today, MPR customers must have additional software on both the server and the client in order to bridge data within an IBM environment, Jain said. With the new version, that requirement is eliminated, letting customers use a single product as both a bridge and router.

For better token-ring connectivity, a single PC running MPR 2.1 supports as many as six token rings, up from one.

MPR Plus 2.1 supports X.25 and the Point-to-Point Protocol for wide-area connectivity, letting a single WAN link carry both bridged and routed traffic.

Also, as expected, Novell this week will map out future enhancements for the MPR line. Ac-

(continued on page 15)

NCR adds to System 3000 server family

Product	Description	Price	Shipping
NCR 3470	Replicated branch server; supports 2 to 8 i486 50-MHz processors and is bundled with NCR LifeKeeper Fault Resilient System (FRS) software for automatic failure detection and recovery.	Not available	Targeted for 4th quarter
NCR 3475	Fault-resilient replicated branch server bundled with LifeKeeper FRS; supports 2 to 12 Pentium processors.	Not available	Targeted for 4th quarter
NCR 3520	Supports as many as 8 i486 50-MHz processors; upgradable to a Pentium processor.	$75,000-$500,000	Immediately
NCR 3570	Fault-resilient server bundled with LifeKeeper software; supports from 2 to 16 i486 50-MHz processors and is upgradable to a Pentium processor.	Not available	Targeted for 4th quarter
NCR 3575	High-end server is expandable from 2 to 32 Pentium processors and is bundled with LifeKeeper FRS.	Not available	Targeted for 4th quarter

GRAPHIC BY SUSAN J. CHAMPENY SOURCE: NCR CORP., DAYTON, OHIO

NCR rollouts broaden mid-range server line

Offers five new platforms, including model that lets mainframe users trial client/server computing.

By Fredric Paul
Senior Editor

DAYTON, Ohio — NCR Corp. plans to fill out its mid-range server line this week by introducing five new platforms, including one positioned to make it easy for mainframe shops to get a taste of client/server computing and others equipped with fault-resilient features.

The new servers are led by the NCR 3520, which is designed to tempt corporate big-iron users to try open systems and client/server architectures without having to disrupt their existing operations. Other new models include the 3470, 3475, 3570 and 3575, each of which includes a pair of existing servers and NCR's LifeKeeper Fault Resilient System (FRS) software.

The mid-range products make NCR's System 3000 family perhaps the broadest server line-up in the industry, ranging from a low-end uniprocessor 486 machine to massively parallel servers with hundreds of processors.

"[NCR is] extending its already broad mid-range offerings to cover all the bases between small desk-side servers for branches and agencies, up through large mid-range servers with high availability requirements," said Peter Kastner, vice president of Aberdeen Group, Inc., a Boston-based market research and computer consulting firm. NCR is clearly demonstrating its "ability to harness the ubiquitous Intel engine into very cost-effective servers," he added.

Mark Hurd, NCR's vice president of server marketing, said the new 3520 server is designed to provide an entry point for mainframe data centers that want to explore client/server computing. Many companies running 30 or 40 applications on an IBM 3090 mainframe, for example, are intrigued by the possible benefits of downsizing but cautious about the transition, he added.

"They want to put their foot in the water, isolate a single application, and bring it down and test it," Hurd said. At the same time, they want to protect their investment if they decide to bring more applications into the client/server environment.

The 3520 uses a highly scalable architecture to ease that process. It can be upgraded in the cabinet from a single 486 processor with less than 50 million instructions per second (MIPS) to a 16-Pentium machine offering approximately 1,500 MIPS — the equivalent of an NCR 3555. The NCR 3520 costs from $75,000 to $500,000, depending on configuration. The product is available now.

The new 3575 server consists of a pair of existing 3455 16-processor Pentium-based servers packaged with NCR's LifeKeeper FRS.

Unlike true fault-tolerant systems, LifeKeeper FRS is a collection of software, services and tools offering fault resiliency or

(continued on page 15)

Firms release centralized NetWare virus protection

By Christine Burns
Staff Writer

BEAVERTON, Ore. — Central Point Software, Inc. and GigaTrend, Inc. last week announced the release of separate virus protection products that run as NetWare Loadable Modules on Novell, Inc. NetWare file servers.

Central Point Anti-Virus (CPAV) for NetWare Version 1.1 and GigaTrend's InocuLAN for ServerDat offer centralized virus protection by scanning file servers and clients for known and unknown viruses at predefined intervals.

Both software packages support automatic installation on servers and clients. The need for administrators to perform individual, manual updates for workstations is eliminated by periodic updates distributed directly from the file servers.

GigaTrend is a Carlsbad, Calif.-based supplier of tape backup devices and backup software, including ServerDat, which is a tape-station backup for NetWare file servers. InocuLAN for ServerDat ships with hooks to ServerDat's backup tape utility, which filters information coming from servers and clients before it is written onto the backup tape.

The centralized maintenance provided by InocuLAN for ServerDat includes management options that allow the network administrator to: establish unattended scanning schedules at intervals ranging from minutes to months; determine the action to be taken when a virus is located, such as report, rename, delete, move or cure; choose to scan all files or only executable files; and select target users and a method for notification of a virus.

InocuLAN for ServerDat runs on NetWare 3.11 or higher and requires 330K bytes of memory and 180K bytes of server storage.

In order to accommodate the client software, workstations must be IBM Personal Computer ATs, Personal System/2s or Extended Industry Standard Architecture-compatible. Also, they must use DOS 3.0 or above and have 400K bytes of memory and 775K bytes of storage.

The product costs $795 per file server and includes unlimited client software.

CPAV for NetWare 1.1 detects viruses more than 50% faster than its predecessor, Version 1.0, released last December. Art Welch, engineering product manager at the company, said that by using an intelligent scanning algorithm, the software is able to keep track of files that have been scanned and rescan them only after they have been modified.

"After the first scanning, [the procedure] becomes completely transparent in terms of performance," Welch said. "It's a time saver because files only get scanned when they need it."

CPAV for NetWare 1.1 requires 500K bytes of memory per file server, which is approximately 100K bytes less than 1.0.

CPAV for NetWare 1.1 is available now for NetWare 3.11 and will be available for NetWare 4.0 by year end. It sells for $1,199. Registered 1.0 users may upgrade to 1.1 for $399 if the product was purchased before April 1. There is no charge for upgrading products bought after that.

Central Point: (503) 690-8088; GigaTrend: (800) 743-4442. ⧉

IBM adapter combines functions

By Christine Burns
Staff Writer

SOMERS, N.Y. — It can't walk and chew gum at the same time, but the communications adapter IBM has introduced allows personal computer users to play games, work with a word processing application and send a facsimile all at once.

The IBM WindSurfer Communications Adapter combines the functions of numerous products — including data and fax modems — and a voice messaging system.

"Since it operates on a DOS/Window system, you can be running a game and then go back to doing some work and all the while you could be sending a fax," said Ralph Hammock, an IBM spokeman.

WindSurfer is a 16-bit Industry Standard Architecture (ISA) busmaster adapter that occupies a single full-size slot in ISA or Extended ISA systems with a 386SX or greater processor.

Most existing communications port applications using the Hayes AT command set will function through the standard Universal Asynchronous Receiver/Transmitter port provided in WindSurfer.

WindSurfer can support a modem speed of 9.6K bit/sec, fax transmissions at 7.2K bit/sec and fax receipts at 9.6K bit/sec.

The adapter also supports Windows-based telephony applications and includes a feature called IBM Phone FX that supports basic voice mail functions.

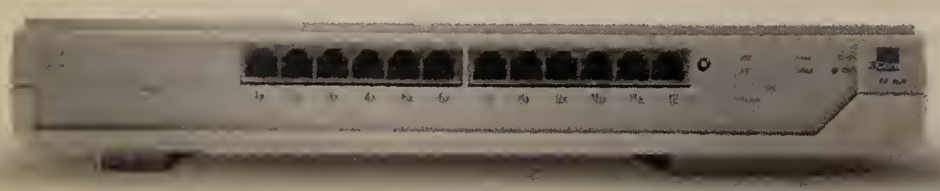
WindSurfer uses the Mwave Digital Signal Processor (DSP) technology, developed cooperatively last year by IBM, Intermetrics, Inc. and Texas Instruments, Inc. A DSP processor, working with the Mwave/OS, enables the product to perform many functions concurrently without burdening the PC's main system processor.

WindSurfer is shipped with DataFAX Lite for Windows for fax processing, plus a Prodigy service.

Available now, the list price for WindSurfer is $399. If ordered directly from IBM, the cost is $350.

IBM: (800) 426-2968. ⧉

Should you buy a hub that suits
you plan for



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Dataproducts preps VPT wares

continued from page 13

Printer Control Language, landscape mode, resolution of 300 dots per inch and legal-size paper.

VPT iterations due out in new Dataproducts models this fall will add resource accounting by virtual printer, allowing network administrators to bill or charge back printer usage by virtual printer, either by pages printed or bytes used.

Another improvement due in the fall will preserve the context of each virtual printer, including downloaded fonts and forms, even if someone else has used the physical printer in the meantime. Not having to resend this information saves time and reduces network traffic, the company said.

VPT software resides in the print server that is built into the printer itself and supports Novell, Inc.'s Internetwork Packet Exchange (IPX), Transmission Control Protocol/Internet Protocol, Apple Computer, Inc.'s EtherTalk and Digital Equipment Corp.'s Local-Area Transport all through a single Ethernet connection. VPT supports the Simple Network Management Protocol Management Information Base I and II so the printer can be managed by SNMP-based systems.

In addition, with its ability to set up a default configuration tailored to the limits of a particular application, VPT can help compensate for inadequate software printing drivers. According to Dataproducts, this is a critical issue for applications in Unix and DEC environments.

VPT will eventually appear in all of Dataproducts' printers as well as machines from other makers, but its first implementation will be in the LZR 1580 and 2080, slated to ship later this month.

The LZR 1580 prints as many as 15 pages per minute, with resolution of up to 800 dots per inch. The LZR 2080 prints at up to 20 pages per minute, with similar resolution. Both models have a minimum of 8M bytes of random-access memory, expandable to 32M bytes.

Prices for the LZR 1580 range from $3,450 to $4,795, depending on configuration, while the LZR 2080 network printer is priced between $4,995 and $5,495. A facsimile modem option for either model is $399.

Dataproducts: (818) 887-8000.

Novell adds features to router

continued from page 13

cording to the company, work is in progress to add asynchronous dial-up capabilities, frame relay and T-1 connections, although time frames were not provided.

Novell also said several third-party vendors are developing products to provide Switched Multimegabit Data Service and Asynchronous Transfer Mode capabilities to NetWare users.

According to analysts, the new MPR capabilities are the kind NetWare users need if they are going to stay with Novell for their more advanced internetworking needs.

"Novell is trying to offer NetWare users the kind of internetworking that doesn't force them into the router culture or force them to expose themselves to a new vendor and a new kind of technology," said Tom Nolle, president of CIMI Corp. in Voorhees, N.J.

"Novell's not trying to do anything unique, they're just trying to reflect reality," he said. "This is a low-cost, easy way for users to get into internetworking from within their NetWare environments."

NetWare MPR 2.1 and MPR Plus 2.1 are available now for $995 and $1,495, respectively.

Novell: (800) 453-1267.

NCR broadens mid-range line

continued from page 13

"near-fault tolerance."

For far less cost than a full fault-tolerant system, it offers increased availability and includes automatic error detection and recovery from system, application and component failures.

Similarly, the 3570 consists of two 3450 eight-processor servers packaged with LifeKeeper software. Initially released with 486 chips, the 3570 will be upgradable to Pentium technology.

On the low end, the new 3475 and 3470 servers package pairs of 3455 and 3450 servers, respectively, with the LifeKeeper software. The 3475 supports up to 12 Pentium processors, while the 3470 can use as many as eight 486 chips, upgradable to Pentiums. Although each of the new systems bundles similar servers, the technology also allows NCR to package dissimilar systems.

The four new server models are scheduled to ship in the fourth quarter, but pricing has not yet been set.

All of the new servers support NCR Unix and, in certain environments, Windows NT. "We believe Unix is ready for prime time," Hurd said, "but we like what we've seen of NT so far."

Currently, NCR is ranked second or third in the mid-range server market, fighting it out with IBM and Hewlett-Packard Co.

"They've got a strong strategy in positioning," said Donna Bleakley, an analyst at D.H. Brown Associates, a consultancy in Port Chester, N.Y. "I think they have an opportunity to do really well in this market."

The new servers are only the first phase of NCR's enterprise-wide strategy, which also includes software components, networking products, services and alliances with operating system vendors, chip makers, vertical software houses, and network and system integrators.

NCR: (513) 852-7200.

Staff Writer Christine Burns contributed to this story.

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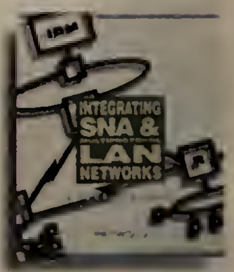

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INTERNETWORKS

LAN-TO-LAN AND LAN-TO-WAN EQUIPMENT AND STRATEGIES

Worth Noting

> "TCP/IP is in the public domain, so we've had little problem getting our multivendor internet to run smoothly. But if we had to deploy a proprietary feature, that would pose a real problem. Luckily, we have no need for those features."
>
> **Brad Passwaters**
> Manager of operations
> Southeastern Universities
> Research Association Network
> College Park, Md.

Link Notes

Cisco Systems, Inc. last week announced that its entire line of routers has received approval from the **British Approvals Board for Telecommunications (BABT)** Production Quality Assurance board. The BABT seal of approval will enable Cisco to ship its products to the U.K. for direct connection to the public network.

Optical Data Systems, Inc. (ODS) last week announced that it will integrate its LanVision Simple Network Management Protocol-based net management package with IBM's NetView/6000. In addition to NetView/6000, an ODS Infinity hub can also be managed by Hewlett-Packard Co.'s OpenView, SunConnect's SunNet Manager and LanVision for Windows.

SynOptics Communications, Inc. last week announced price reductions for its 10Base-T products. Prices on the LattisHub 2813 and 2814 T stackable hubs have

(continued on page 18)

Cabletron joins bustle in FDDI-over-copper arena

Offers new hub modules, net interface cards.

By Skip MacAskill
Senior Writer

ROCHESTER, N.H. — As the draft ANSI standard for running FDDI over copper wire nears finalization, hub makers and adapter card vendors have been jumping on the bandwagon weekly.

This week Cabletron Systems, Inc. unveils its new line of Fiber Distributed Data Interface-over-unshielded twisted-pair wiring products that include new modules for its intelligent hub as well as new adapter cards for personal computers and Apple Computer, Inc. Macintoshes.

Compatible with the latest version of the ANSI standard expected to be finalized this fall, Cabletron's new modules for its Multi Media Access Center (MMAC) hub include the four-port FDCMIM-24 and eight-port FDCMIM-28, both of which support Category 5 cable.

The new modules are compatible with the existing FDDI modules supported by the MMAC, enabling users to combine twisted-pair, multimode and single-mode fiber FDDI modules in the same chassis.

The new modules can be managed and controlled via a console port or by any Simple Network Management Protocol-based network management system, including the company's own Spectrum platform.

Available in 90 days, the FDCMIM-24 and FDCMIM-28 cost $3,695 and $6,695, respectively.

Cabletron will also provide the

(continued on page 18)

NetWorth details string of net mgmt. enhancements

By Skip MacAskill
Senior Writer

DALLAS — NetWorth, Inc. last week announced a series of net management enhancements that add the ability to do load balancing and support for a greater number of users.

The load-balancing feature debuts in Version 2.0 of the company's HubView Simple Network Management Protocol-based net management system. The product has a Microsoft Corp. Windows graphical user interface and can be used to manage the company's Series 4000 hub as well as its new Series 3000 stackable hub line. The previous version, 1.2, only managed the 4000 hub.

By supporting NetWorth's Distributed Segment Architecture, HubView 2.0 lets net managers move groups of users to new network segments on the fly if one segment becomes bogged down. Previously, users could only be moved by pushing a button on the 3000 hub or MultiSegment 4000 module itself.

HubView allows the net manager to configure the network, detect alarms and events, and obtain traffic statistics on the net down to the port level.

HubView 2.0 is available now for $1,495, 37% less than Version 1.2's price of $2,395.

In addition to the new HubView application, NetWorth introduced two management modules for its 4000 intelligent hub line that are based on Novell, Inc.'s NetWare Application Engine technology, which allows the hub to support and run NetWare applications.

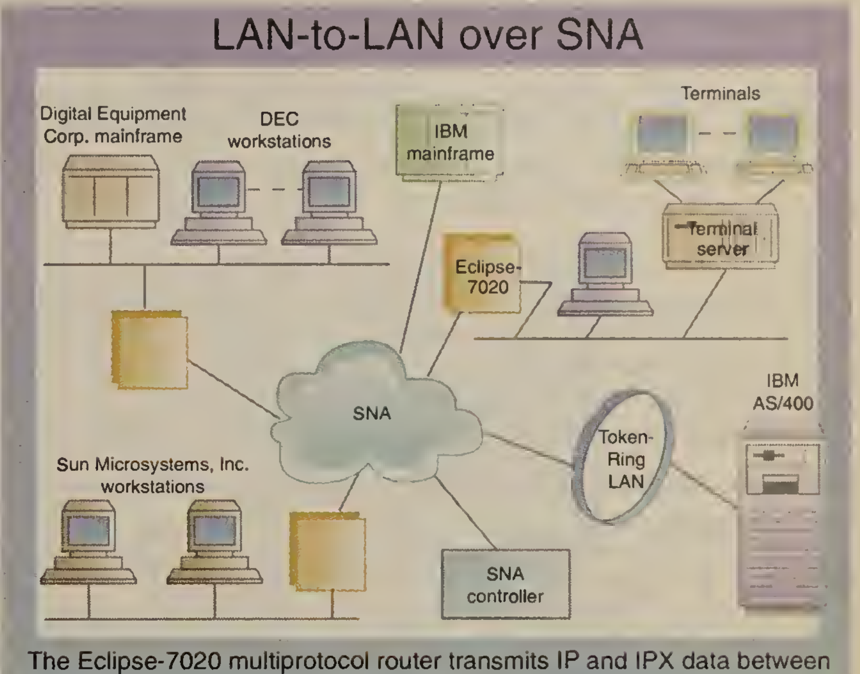
The Ethernet Management Engine (EME), which takes up two slots in the 4000, can be used to manage 30 independent Ethernet segments and 192 users supported by the hub.

The Token Ring Management Engine (TRME) offers similar functionality to the EME, and supports eight independent rings and 96 users. Available now, the EME and TRME cost $3,495 and $3,795, respectively.

Finally, NetWorth announced a 60% price reduction on its Advanced Fault Tolerance Card, a daughterboard for its 4000 Token Ring Host Module that reduces jitter via phase locked-loop technology. It now costs $395, down from $995.

NetWorth: (800) 544-5255. ◘

LAN-to-LAN over SNA



The Eclipse-7020 multiprotocol router transmits IP and IPX data between LANs over existing SNA communications links.

GRAPHIC BY TERRI MITCHELL

SOURCE: GNWC WIRE, CABLE AND NETWORK PRODUCTS, INC., DOWNERS GROVE, ILL.

APT, GNWC offer SNA routing solutions

Vendors to ship gateway/routers that let users run multiprotocol LAN traffic over SNA backbones.

By Maureen Molloy
Senior Editor

Many IBM users with a heavy investment in SNA networks see little value in migrating that legacy traffic to router-based internetworks just to accommodate a smattering of LAN interconnection requirements. But they also balk at the idea of deploying parallel nets for LAN traffic.

Aiming squarely at these reluctant Systems Network Architecture users, two vendors this week will enter the internet market with software-based gateway/routers that let users ship multiprotocol local-area network traffic over SNA backbones.

Birmingham, Mich.-based Automated Programming Technologies, Inc. (APT) will announce APTNet LAN, an application-level gateway that acts as an alternative to bridges or routers to transmit files between LANs across an SNA network.

Separately, Downers Grove, Ill.-based GNWC Wire, Cable and Network Products, Inc. will introduce the Eclipse-7020 router. Developed by Computer Communications, Inc. and sold exclusively through GNWC, the router will enable users to transmit Novell, Inc.'s Internetwork Packet Exchange (IPX) and Transmission Control Protocol/Internet Protocol traffic over an SNA network.

Anura Guruge, an independent strategic consultant based in New Ipswich, N.H., said one advantage of both vendors' products is that they enable users to maintain the reliability of their SNA network. It also obviates the need to retrain staff because the solutions let SNA users stick with what they know.

APTnet

APTNet LAN works with APT's APTNet Mainframe Gateway software to provide internetworking and mainframe-initiated collection and distribution of files.

It lets customers utilize SNA nets to access file servers or to print on any remote LAN printer. Using standard personal computer drive letters, SNA users can access files on a remote machine with standard application software just as they would access information on a local disk or file server.

The APTNet software resides on a LAN-attached workstation. Terminate and stay resident (TSR) programs on networked PCs intercept users' requests to access remote LAN resources and hand them off to the APTnet gateway. The gateway, in turn, routes it to the mainframe, and the APTnet Mainframe Gateway then routes it to the intended server at the remote site. The mainframe can also provide virtual disk

(continued on page 18)

APT, GNWC offer SNA routing solutions

continued from page 17

space, acting as a central file server.

APTNet comes equipped with a remote help desk capability that enables users to monitor and control remote PCs.

Troubleshooting features of the new product include the ability to send and broadcast messages, chat with remote users via the keyboard, and display the memory maps and machine configurations of remote PCs.

One disadvantage of the APTNet SNA backbone solution compared to a bridge/router multiprotocol backbone is speed.

Since SNA data links are typically 9.6K or 19.2K bit/sec, APTNet cannot provide the speeds capable with bridge/routers.

But Barry McNealy, vice president of APT, said APTNet is more cost-effective than bridges or routers. A two-port bridge/router typically costs between $3,000 and $5,000. APTNet costs about $1,000 per remote site.

"If the users' needs are for high-speed, hub site-to-hub site routing, then they'd go with a traditional router. But there are many users deploying Novell LANs in hundreds of branch sites that can't afford to put routers in each one because the cost is too exorbitant," McNealy said.

GNWC

GNWC has a similar strategy with its Eclipse-7020, a software-based router that encapsulates IP and IPX data inside IBM's LU 6.2 packets and routes them to remote LANs over existing SNA nets.

To the SNA host, the Eclipse is a PU Type 2.1 device, enabling it to pass LAN traffic to other PU 2.1 devices over the SNA net without host intervention.

The Eclipse runs on Intel Corp. 486-based platforms under a DOS operating system. It supports as many as four Ethernet or token-ring LANs and a maximum of four Synchronous Data Link Control wide-area interfaces at speeds up to 56K bit/sec. It can support as many as 30 concurrent sessions.

The Eclipse router also comes equipped with a 2-to-1 data compression capability, which enables users to boost the effective bandwidth on the SDLC line from 9.6K to 19.2K bit/sec.

The company said it will add support for Network Basic I/O System, DECnet and AppleTalk in a future release.

In addition, it will enable the Eclipse to run on an OS/2 platform and be managed via the Simple Network Management Protocol.

The Eclipse router costs $4,495 and is available now.

APT: (313) 540-9877; GNWC: (800) 468-2121.

Cabletron joins FDDI bustle

continued from page 17

FDDI-over-copper connection at the desktop via three new Desktop Network Interface (DNI) cards. The F3019 is designed for Micro Channel Architecture-based PCs, while the F7019 is for Extended Industry Standard Architecture-based PCs and the F6019 is for the NuBus in Macintoshes.

The new DNI cards will ship in 90 days. The F3019 and F7019 cost $995 each, and the F6019 is priced at $1,395.

In a related announcement, Cabletron also said it will roll out single-mode fiber products this week as well as a multimode-to-single mode transceiver.

The new four-port FDCMIM-34 and eight-port FDCMIM-38 modules for the MMAC support ANSI's Single Mode Fiber-Physical Medium Dependent standard. Available later this month, the FDCMIM-34 and FDCMIM-38 cost $25,950 and $48,995, respectively.

The new four-port FDR-4000 is a dual-attached stand-alone transceiver that converts multimode fiber connections into single-mode connections via an FDDI Media Interface Connector. Available now, the FDR-4000 costs $15,000.

Cabletron: (603) 332-9400.

Link Notes

continued from page 17

been slashed by as much as 13% to $1,995, while the System 2000 Ethernet Network Management Modules have been reduced by up to 23% to $2,295.

Prices for SynOptics' Ethernet modules for the System 3000 have also been reduced. The 24-port 10Base-T module was cut 8% to $2,295, while the 12-port 10Base-T module was trimmed 7% to $1,395.

CrossComm Corp. has announced that **General DataComm, Inc. (GDC)** will provide hardware installation, maintenance and support services to CrossComm customers. The service is available immediately and will be provided by GDC's service subsidiary, DataComm Service Corp.

Advanced Computer Communications (ACC) announced that it will support **Novell, Inc.**'s NetWare Link Services Protocol (NLSP) and IPXWAN protocol on its line of routers by mid-1994. NLSP is Novell's next-generation Internetwork Packet Exchange (IPX) protocol that promises to improve the scalability and performance of IPX-based internetworks.

Novell's IPXWAN protocol provides a common way for users to send IPX traffic over a variety of wide-area network facilities, including frame relay, X.25, Point-to-Point Protocol and Switched Multimegabit Data Service.

RAD Network Devices, Inc. (RND) and **Retix** separately announced new remote Ethernet bridges. RND's RAN and Retix's 4810 Remote Bridge are two-port Ethernet devices that support wide-area network links at speeds up to T-1. Both can be managed via the Simple Network Management Protocol.

In addition, both bridges are equipped with 4-to-1 data compression for 64K bit/sec channels. RND's bridge is an optional compression module, while Retix's compression is housed in software. Retix's 4810 costs $3,200, and RND's RAN bridge costs $3,000. Both products are available now. RAN costs $4,000 with the data compression module.

Retix: (800) 255-2333; RND: (714) 891-1446.

Xyplex, Inc. and **NetLabs, Inc.** last week announced a partnership that will allow Xyplex's family of networking products, including its Network 9000 Intelligent Hub, to be managed from NetLabs' NetLabs/Manager net management platform.

Xyplex's Management Information Bases have been integrated into NetLabs/Manager, allowing Xyplex's ControlPoint device management application to run on top of the platform.

Kalpana, Inc. and **Hewlett-Packard Co.** have announced plans to jointly develop products that integrate Kalpana's EtherSwitch technology with HP's EtherTwist hub technology to provide added throughput for 10Base-T work groups.

Kalpana also announced plans to develop products that are compatible with HP's and AT&T Microelectronics' proposed 100M bit/sec standard.

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Worth Noting

Client/server applications, file transfers and local-area network replacement topped the list of items that will drive usage of Asynchronous Transfer Mode-based services, according to a survey of 100 firms conducted by Infonetics Research, Inc., a market research and consulting firm in San Jose, Calif.

Carrier Watch

AT&T last week announced a full-motion video storage and retrieval system that will enable local telephone companies, cable companies and other network service providers to offer pay-per-view and video-on-demand entertainment programming.

The first release of software for the systems is scheduled for mid-1994.

The system will be enhanced to operate over nets that support interactive services such as videoconferencing and multimedia educational and reference programs.

AT&T's interactive video server stores video programs and permits viewers to select the titles they want to see at any time. It works in concert with AT&T's billing and maintenance systems.

The server will initially be situated in or near a service provider's headend, satellite uplink center or central office, where video programs are distributed to viewers. A headend is the originating point of a cable television signal.

As viewer demand and the variety of services expand, the server can be deployed from a networked server. ◻

Local, long-haul carriers join to thwart toll fraud

Aim is to secure password, calling card numbers.

By Bob Wallace
Senior Editor

WASHINGTON, D.C. — A special task force of local and long-haul carriers is working to shield users from toll fraud by making it tougher for hackers to use stolen pass codes and calling card numbers.

The Toll Fraud Prevention Committee has clamped down on fraudulent international calling and is currently working to eliminate bill-to-third-party calling — hackers' two top means of committing toll fraud and defrauding users.

The committee comprises technicians from the Big Three, the regional Bell holding companies, independents — including GTE Telephone Operations — and a myriad of smaller telephone companies across the country.

"Our goal is to reduce telecom fraud," said Bill Sushon, cochairman of the committee and a member of AT&T's government affairs unit. "Although we can't totally prevent it, we can put a large dent in it."

The group finds solutions that are voluntarily implemented by its members and are not subject to regulatory approval.

Some of the Toll Fraud Prevention Committee's first efforts were directed at eliminating fraudulent calls made from overseas locations to pay phones in

(continued on page 24)

> "Although we can't totally prevent [toll fraud], we can put a large dent in it."

▲▲▲

Carrier LCI wins pricing flexibility for int'l services

By Bill Burch
Washington Correspondent

DUBLIN, Ohio — The small domestic carrier LCI International last week announced it has won new pricing flexibility for its international services, which could result in lower costs for its customers.

Thanks to an April 12 ruling by the Federal Communications Commission, the company has end-to-end pricing flexibility for the resale of international private lines to 16 countries. Previously, LCI had to resell the international piece of a connection at cost and make its profit on the domestic portion of the circuit.

LCI says now it will be able to more tightly control costs on customers' voice and data calls to Australia, Belgium, Brazil, Canada, France, Germany, Hong Kong, Ireland, Italy, Japan, Mexico, the Netherlands, Singapore, Spain, Switzerland and the U.K.

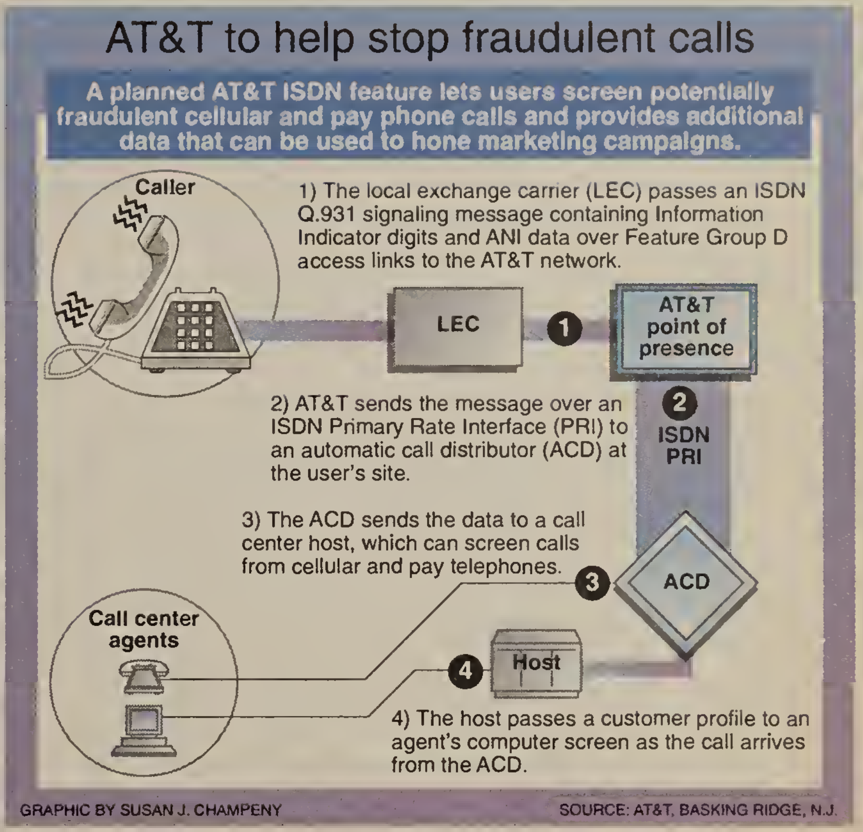
In other news, LCI won a second international victory with provisional FCC approval for private-line connection of Canadian customers to the U.S. public net.

LCI is the third company to provide a private-line bypass for international long-distance service to Canada. Unlike the switched service that typically runs across the border, the new service directly connects users to the U.S. network via private lines.

Canadian firms EMI Communications and Fonorola have been providing transborder service, taking advantage of an FCC decision declaring the Canadian and U.S. telecommunications markets equally open and allowing transborder private lines.

Such bypass allows the three companies to duck under the system of international accounting rates that usually governs international long-distance service. Other markets that may soon be opening up for similar international bypass are Australia and England, according to Eric Mattlin, LCI's manager of international marketing.

LCI: (614) 798-6000. ◻


AT&T to help stop fraudulent calls

A planned AT&T ISDN feature lets users screen potentially fraudulent cellular and pay phone calls and provides additional data that can be used to hone marketing campaigns.

1) The local exchange carrier (LEC) passes an ISDN Q.931 signaling message containing Information Indicator digits and ANI data over Feature Group D access links to the AT&T network.

2) AT&T sends the message over an ISDN Primary Rate Interface (PRI) to an automatic call distributor (ACD) at the user's site.

3) The ACD sends the data to a call center host, which can screen calls from cellular and pay telephones.

4) The host passes a customer profile to an agent's computer screen as the call arrives from the ACD.

GRAPHIC BY SUSAN J. CHAMPENY

SOURCE: AT&T, BASKING RIDGE, N.J.

AT&T expands ISDN caller information

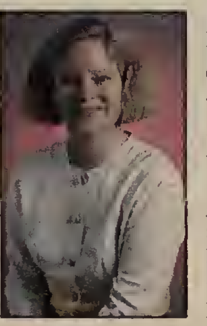
Adds feature that gives data on phones used for 800 calls to help detect toll fraud and bolster use.

By Bob Wallace
Senior Editor

BASKING RIDGE, N.J. — In a move to boost ISDN use and help firms spot toll fraud, AT&T is planning to enhance its ISDN service by providing data on the type of phone used to place 800 calls.

With the enhancement, the carrier will deliver with each call what it calls Information Indicator digits, along with automatic number identification data, showing the caller's 10-digit telephone number.

The new information will identify whether the caller is using a pay phone — a preferred practice of hackers — or a cellular phone, information that is not provided by ANI today and can be critical in applications such as order processing.


Pierce

The digits will enable AT&T Integrated Services Digital Network users, which are primarily large 800 users, to screen potentially fraudulent calls from pay phones while giving users better information about the consumers that call in to order products and services.

"Information Indicator digits are an easy way for companies to identify their customers," said Lisa Pierce, an product manager for ISDN at AT&T. "And they can use the digits to make sure they're not sending $15,000 worth of products to an inmate that called in from Attica."

While ANI gives the customer the main billing number of the caller, users that do not match ANI against certain destinations, such as prisons, in their host database have no way of knowing the call's origin. With Information Indicator, users could at least tell that the call is coming from a pay phone.

AT&T began offering ANI as an optional feature in conjunction with its ISDN Primary Rate Interface in April 1988. Firms including American Express, Union Pacific Railroad, Bausch & Lomb, Days Inns and WATS Telemarketing Corp. initially used ANI to speed call processing and personalize customer service.

The ANI arrives just before the 800 call and is passed to host computers for a match against a customer profile, which is then passed to the customer service agent as the incoming call is transfered from an automatic call distributor.

(continued on page 24)

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Carriers join to thwart toll fraud

continued from page 21

the U.S. — a favorite practice of hackers.

Some committee members decided to utilize a specific single digit that appears to an operator prior to the last four digits of the number called. This indicates to the operator that the call is directed to a pay phone.

One of the committee's toughest challenges is thwarting hackers who steal calling card numbers and then place calls to a remote pay phone using three-way calling to bridge the call to its destination.

Hackers use this scheme to route calls through small towns, which helps them from being located. AT&T admitted that carrier and law enforcement agencies concentrate on deterring hackers who direct calls from big cities with large immigrant populations, such as Los Angeles, Miami and New York, instead of rural towns.

Innovative approaches

The group is exploring ways to use the prefix approach to solve that problem.

The committee has also attacked the toll fraud problem indirectly through a marketing program designed to teach people how to minimize the chances of having their calling card number stolen by so-called shoulder surfers, who watch people dial calling card numbers in public places and sell the authorization code.

"We're telling folks not to speak their number loudly to an operator and to keep an eye out for suspicious people with binoculars and video cameras that may be looking over their shoulder," Sushon said.

Although the committee finds ways to eliminate hackers' means of committing toll fraud, not members have the necessary funds to implement all the changes in their networks. "It really depends on how big and expensive the fix is," Sushon said. "Some telephone companies may not be able to afford to make their networks fraud-proof."

The Toll Fraud Prevention Committee meets formally four times a year but is open only to members, according to Sushon. "Due to the sensitive nature of the meetings, we keep them closed," he said. ◼

AT&T expands ISDN caller information

continued from page 21

AT&T is the first of the Big Three carriers to detail plans for this type of ISDN enhancement, although MCI Communications Corp. and Sprint Corp. currently offer ISDN Primary Rate Interface (PRI) service to users.

The company said Information Indicator digits only fill a few fields of the message, which Bell Communications Research standardized on. The carrier is considering providing additional information about callers in the message's 90-plus fields but would not discuss its plans.

Pierce said the Information Indicator enhancement will be provided to ISDN PRI users as a standard feature by year end.

"This is definitely an enhancement that we would be interested in since it would let us screen calls that are likely to be fraudulent," said Pat Derr, telecommunications manager with WATS Telemarketing Corp., an Omaha, Neb.-based 800 service bureau. "It would also give us valuable demographic information that would enable our customers to fine-tune their advertising and marketing programs."

WATS Telemarketing handles toll-free calls to 8,500 AT&T and MCI 800 numbers for 300 users, including American Express Co., Avon Products, Inc., Time Life Books and Time Warner, Inc.

"If Time Life found that it was getting a good number of inquiries from cellular phones, which are used widely by mobile workers, they could target this market with their ads and marketing efforts," Derr said.

With the enhancement, AT&T receives Information Indicators over Feature Group D access from local telephone companies to the AT&T network. The carrier then sends the ANI and the Information Indicator digits in a Q.931 signaling message over the PRI's D signaling channel to the user's site.

Feature Group D access is the class of service associated with Equal Access. With Feature Group D, all interexchange carriers use the same type of links to the local telephone companies. Before, long-haul carriers used links of varying quality.

According to Pierce and Derr, PRI users will need to modify existing host software to support screening, just as they did to their databases when ANI came along. "There would need to be some modifications to the host's database if we wanted to do screening based on the Information Indicator digits," Derr said. "It wouldn't be anything major though."

AT&T: (908) 221-2000. ◼

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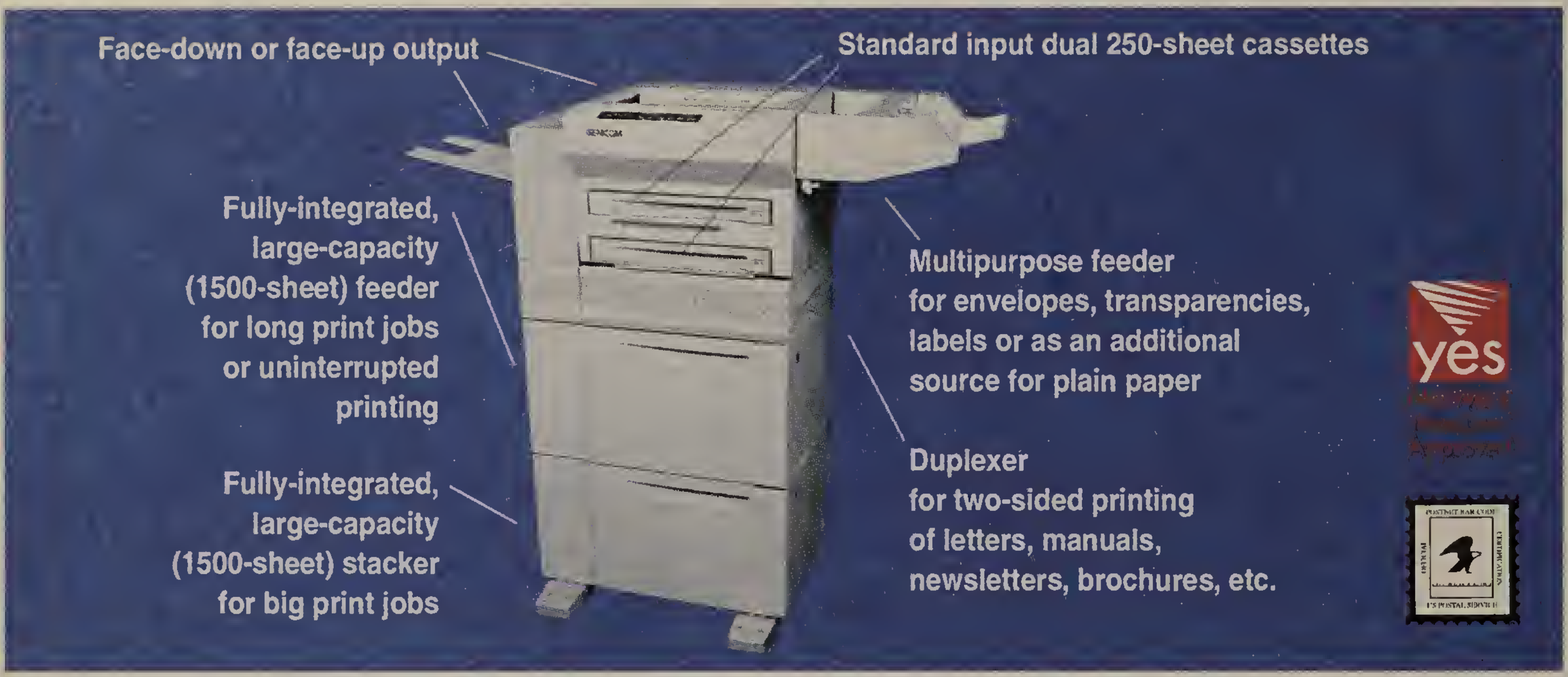
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Worth Noting

Sybase, Inc., an Emeryville, Calif., database software vendor, this week will demonstrate for the first time its Replication Server and announce pricing and availability for the product. Replication Server, part of Sybase's System 10 product line, is designed to copy part or all of a database across multiple sites.

Store & Forward

Members of the **Electronic Mail Association (EMA)** and the **X.400 Application Program Interface Association (XAPIA)** next week will address the development of an electronic messaging directory synchronization standard.

The June 17 meeting will immediately follow the conclusion of the EMA's Electronic Messaging '93 conference in Atlanta. The directory synchronization standard would be designed to support a migration to X.500. All EMA members attending Electronic Messaging '93 are welcome to participate in the meeting, which will be held at 1 p.m.

Alex Rassey, a product marketing manager at Retix, said his company has pitched a directory synchronization specification to XAPIA for review.

EMA: (703) 875-8620.

Compuware Corp., a Farmington Hills, Mich., systems software vendor, announced plans to buy **EcoSystems Software, Inc.**, a Cupertino, Calif., vendor of

(continued on page 27)

Novell teams with Retix on X.400 NLM for Global MHS

Also announces X.400 OEM developers' kit.

By Bob Brown
Senior Editor

Novell, Inc. and Retix this week will announce a new X.400 NetWare Loadable Module (NLM) for Novell's multiprotocol message backbone product, NetWare Global Message Handling Service (MHS).

In a related move, Novell announced an X.400 OEM Development Kit designed to let third-party providers build X.400 products that support NetWare Global MHS. Retix is the first Novell partner to have built a product using the kit.

The new Retix X.400 for NetWare Global MHS software, which is being beta-tested, will be shown at the Electronic Messaging '93 conference in Atlanta next week. The X.400 module will complement existing NetWare Global MHS NLMs for the Simple Mail Transfer Protocol and Systems Network Architecture Distribution Services. The software will run on the same NetWare server running NetWare Global MHS.

The product includes NLM versions of Retix's X.400 message transfer agent and reliable transfer service elements, Retix's customized version of the X.400 Application Program Interface Association's library, a Retix configuration utility, and Novell's X.400 Protocol Access Module and Open Systems Interconnection local- and wide-area network transports.

"This product enables a NetWare user to gain access to a much wider base of public and intercompany services," said

(continued on page 27)

Wingra unwraps add-ons for Missive E-mail switch

By Bob Brown
Senior Editor

ATLANTA — Wingra Technologies, Inc. next week will roll out add-on products for its electronic mail switch that add connectivity with Lotus Development Corp. Notes and E-mail directory synchronization.

The Madison, Wis., vendor, which began shipping its Missive E-mail switch in February, will unveil the add-on products at the Electronic Messaging '93 conference here.

The switch is based on a Digital Equipment Corp. VAX and provides links among numerous local- and wide-area network and host E-mail systems. A company official said Wingra is looking to port Missive to other platforms but declined to provide more details.

The Missive Notes Channel is a new module for the E-mail switch that provides connectivity with Lotus Notes 2.0 and 3.0, as well as other E-mail systems. Initially, the Notes module will support Notes running on OS/2 but will be upgraded later this year to support Notes on Microsoft Corp. Windows.

The Missive Notes Channel will ship early in the fourth quarter. Pricing has not been set, although most Missive modules cost about $3,000.

Directory Assistance

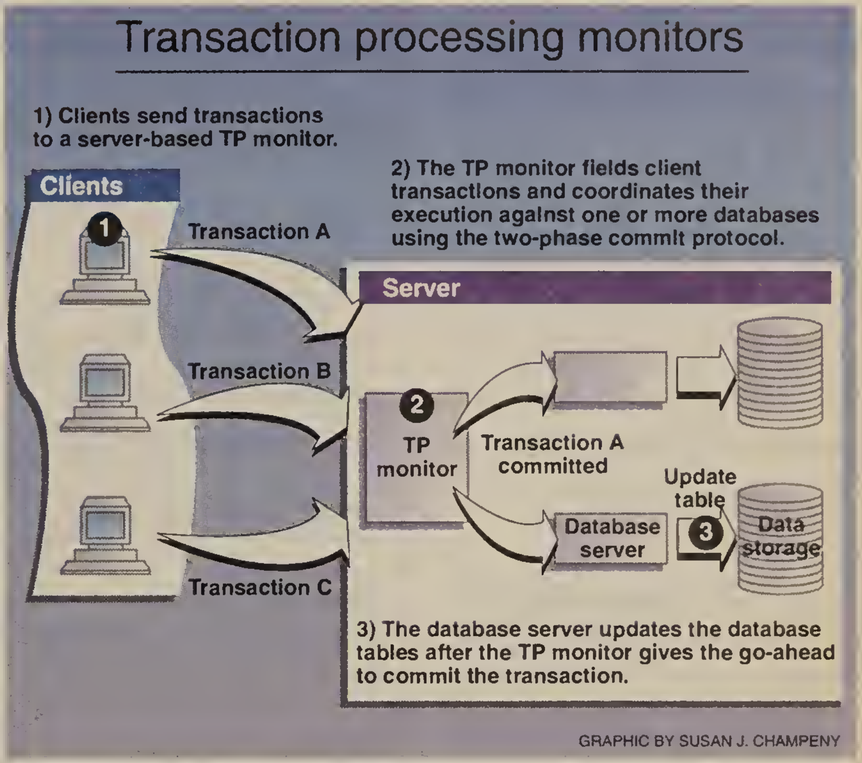
Wingra's new directory software, which is dubbed Missive Directory Assistance, is designed to provide bidirectional directory synchronization between directories from cc:Mail, a division of Lotus, and DEC's Distributed Directory Service for DEC E-mail systems.

The directory software, which resides at the VAX running the Missive E-mail switch software, maps addresses between cc:Mail and DEC systems.

Future directory products will be designed to tie Microsoft E-mail systems and those based on Novell, Inc.'s Message Handling Service (MHS) to DDS, but details were not available.

The Missive Directory Assistance software is scheduled for release early in the fourth quarter and will probably cost between $10,000 and $15,000, company officials said.

Wingra: (608) 238-4454. ◘


Transaction processing monitors
1) Clients send transactions to a server-based TP monitor.
Clients
1
Transaction A
Transaction B
Transaction C
2) The TP monitor fields client transactions and coordinates their execution against one or more databases using the two-phase commit protocol.
Server
2
TP monitor
Transaction A committed
Update table
Database server
3
Data storage
3) The database server updates the database tables after the TP monitor gives the go-ahead to commit the transaction.

GRAPHIC BY SUSAN J. CHAMPENY

TP systems moving to client/server side

Consultant discusses evolution of TP monitors and their newfound role in client/server computing.

Most companies would no sooner migrate their transaction processing (TP) applications off a mainframe than revert to computer punch cards. But the tidal wave of client/server computing is slowly eroding the mainframe's grip on TP systems.

Several vendors, including IBM, Transarc Corp. and Unix System Laboratories, Inc. (USL), have shipped Unix-based on-line transaction processing (OLTP) systems — also called TP monitors — as well as versions for DOS, OS/2 and other platforms.

To understand how TP monitors have evolved and the problems and opportunities associated with client/server-based TP systems, *Network World* Senior Editor Wayne Eckerson recently spoke with Max Dolgicer, consultant at Tucker Network Technologies, Inc. in South Norwalk, Conn., who has more than 17 years of experience developing distributed computing systems.

How have TP monitors evolved?

TP monitors were developed about 25 years ago to enhance IBM mainframe operating systems, which were designed only for batch processing. IBM developed CICS and IMS in response to users who wanted more control over data. Users wanted to be able to enter information into the computer and get an immediate response.

The first TP monitors sought to manage and control four areas: terminal I/O, scheduling of work, execution of multiple user requests and transaction management.

A lot of people who didn't grow up in an IBM shop have had difficulty understanding the concept behind CICS or TP monitors.

That's because many other systems — such as Tandem [Computers, Inc.] or Stratus [Computer, Inc.] processors, for example — are designed from the ground up to support on-line transaction processing. Their operating systems are basically TP monitors that address the four areas noted.

What is a transaction?

Think of a transaction as a business deal in which two parties get together, negotiate an agreement and carry it out. If the deal happens, both sides are affected. If it falls through, both sides remain as they were before they got together.

What types of applications require a TP monitor?

In the past, deciding whether an application required a TP monitor was easy. Anything that

(continued on page 27)

INDUSTRY UPDATE

VENDOR STRATEGIES, MARKET TRENDS, ALLIANCES AND FINANCIALS

Worth Noting

> "When we see a new technology, we have to resist doing one thing — being cynical. We can be skeptical about it, but we shouldn't be cynical."
>
> **Howard Anderson**
> Managing director
> The Yankee Group
> Boston

People & Positions

Terry Eger, formerly vice president of sales and marketing at Cisco Systems, Inc., has joined the board of directors of **T3plus Networking, Inc.**, the Santa Clara, Calif.-based supplier of T-3/Synchronous Optical Network broadband switches.

James Anderson, a partner in the venture capital firm **Merrill, Pickard, Anderson & Eyre**, which last month invested $10 million in T3plus, was also named to the company's board.

Brendon Corrigan, formerly director of corporate development at **Teleport Communications Group, Inc.**, has been appointed vice president of the company's public communications division, where he will be responsible for developing public-switched net business.

Legent Corp., a Vienna, Va.-based vendor of management software, named **Tom Yellin**, formerly senior vice president of product development, as senior vice president and chief technology officer. Yellin will be responsible for the overall technical direction for the company. **Charles Riegel**, formerly Legent's vice president of marketing, was appointed vice president of new markets. ☐

MASH units in Croatia get medical advice from home

Telemedicine system puts experts at the scene.

By Ellen Messmer
Senior Correspondent

ZAGREB, Croatia — The U.S. Army has set up a mobile medical unit here with a communications link to the U.S. and Germany that helps medical personnel treat the injuries of United Nations peacekeeping troops.

Like the television series *M*A*S*H* about the Korean War, Army doctors and nurses in Zagreb have set up a mobile unit to patch up U.N. troops drawn into this all-too-real civil war.

In Croatia, Army medical personnel are storing patient X-rays on Apple Computer, Inc. Macintosh PowerBooks and transmitting the images stateside for expert consultation, an option *M*A*S*H's* Hawkeye never had.

Lt. Col. Edward Gomez, chief of peripheral vascular surgery at Walter Reed Medical Center in Washington, D.C., first developed the "telemedicine" system deployed in Zagreb while he was stationed in Somalia, where U.S. troops were sent to deliver emergency food supplies.

"We want to transfer the medical records back to a primary hospital," said Gomez, who went to Croatia to oversee the setup of the Army's field system, which is based on laptop computers. "We want to have the patient's history, X-rays and findings available for consultation in the U.S. or Germany."

Every patient treated in Zagreb has a computer file containing their medical records established in an Apple Quadra 950 computer at either Walter Reed or the Landstuhl Army Medical Center in Landstuhl, Germany.

In Zagreb, medical personnel use an Eastman Kodak Co. DSC 200 digital camera to photograph the patient's clinical images, such as X-rays. The images are then transferred to the Macintosh PowerBook 180 laptops, where

(continued on page 27)

INDUSTRY BRIEFS

ANSI offers registration service for E-mail. ANSI has set up a Message Handling System Management Domain Registration Service to provide companies and organizations with unique names to identify themselves when using electronic mail. The alphanumeric names can be used to identify public carriers as an Administration Management Domain or firms as a Private Management Domain in the U.S. For more information, call the ANSI registration coordinator at (212) 642-4976.

After FTS 2000, the deluge. Already preparing for the next large telecommunications buy, the General Services Administration is asking industry and users for guidance concerning the telecommunications services that the government should purchase once the Federal Telecommunications System 2000 contract expires in December 1998. Comments should be sent by Aug. 1 on hard copy and 3½-in. MS-DOS-formatted disks using WordPerfect 5.1 to the GSA, attention Concept Development Conference, 7980 Boeing Court, Vienna, Va. 22182. The government will make the record available for public comment and hold a conference in October to discuss the multiple points of view.

Good credit in wireless. RAM Mobile Data, Inc., the wireless service provider based in New York, and TransNet, Inc. of Tampa, Fla., which processes financial data, are joining forces on a wireless credit card service that authorizes transactions within seconds via RAM's wireless data network. The only hardware required in addition to a point-of-sale terminal is a protocol converter and the Ericsson GE C719 radio modem. ☐

Major wireless LAN competitors

Company	Product	Technology
ALPS Electric USA, Inc. San Jose, Calif.	RadioPort	Radio
InfraLAN Technologies, Inc. Auburn, Mass.	InfraLAN	Infrared
Motorola, Inc. Richmond, B.C.	Altair	Licensed radio
NCR Corp. Dayton, Ohio	WaveLAN	Radio
Photonics Corp. Campbell, Calif.	PhotoLink	Infrared
Proxim, Inc. Mountain View, Calif.	RangeLAN	Radio
Telesystems SLW, Inc. Don Mills, Ontario	ARLAN	Radio
Windata, Inc. Northborough, Mass.	FreePort	Radio

SOURCE: *NETWORK WORLD* AND ALTAMONT RESEARCH, CUPERTINO, CALIF.

Wireless nets extend, not replace, wired

Vendors forced into market niche by falling cost of wired nets, changing application demands.

By Fredric Paul
Senior Editor

"If you can't beat 'em, join 'em."

That familiar advice seems to be the mantra for vendors in the wireless local-area network market. Only a few years ago, the companies were hyping their products as perfect alternatives to pulling cable to connect computers.

However, things have not worked out that way, and today's wireless product vendors have been forced to pursue a more modest niche strategy of extending wireless nets to places where wires simply cannot go.

The market now is "wire extension, not wire replacement," said David King, vice president of marketing for Mountain View, Calif.-based Proxim, Inc., a leader in wireless LANs. "We don't replace wired LANs with new wireless architectures; we extend the LAN to people who don't have connectivity, especially [those with] portables."

Both Proxim and competitor NCR Corp. have recently introduced credit card-size wireless LAN adapters that fit into the Personal Computer Memory Card International Association-standard slots built into many notebook computers.

Wireless companies did not foresee being forced into this market niche. "A couple of years ago, companies wrote business plans for wireless LANs based on the cost of wiring," said Eric Zimits, a research analyst at Volpe, Welty & Co., an investment banking firm in San Francisco.

But with the cost of Ethernet cards coming down and the emergence of inexpensive wiring options, "I don't think that business model is going to work," he said. "They're never going to be able to chase wired LANs on a cost-per-node basis."

The ability of wired networks to support ever-faster speeds and the voracious bandwidth appetite of new applications, such as multimedia, have also conspired to leave wireless LANs out in the cold. Wireless' battles over spectrum allocations, proprietary implementations that restrict users to a single system, and lingering concerns about data security and potential health risks have not helped, either.

Those troubles have led to sales far below expectations.

The Yankee Group, a market research firm in Boston, estimates the number of active wireless LANs at 90,000, growing to 250,000 in 1996. U.S. revenue estimates for the market range from $100 million to $300 million this year, growing to anywhere from $200 million to $800 million by 1996. That's a fraction of the wired LAN market and only a sliver of the market for other types of wireless connectivity.

According to Rifaat Dayem, president of Altamont Research in Cupertino, Calif., those figures "don't say wireless LANs are not a viable market, but they're a small piece of the overall pie."

That small piece actually comprises still other niches where

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Wireless nets extend wired

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products are tailored for:

- Nomadic users within offices — people who need to link their portable computers to the network no matter where they may be located.
- Temporary networks as well as spontaneous or ad hoc work groups.
- LAN environments where the moves, adds and changes that wireless makes easy are especially commonplace.
- Offices and other environments that are particularly difficult to wire, such as older office buildings or factory floor environments.
- Retail, point-of-sale and inventory applications where wireless nets let stores easily reconfigure their sales floors or even set up mobile register stations.
- Medical applications.
- Peer-to-peer networks for small companies and other users that want the utmost in simplicity.

To escape the confines of these niches, exploit other opportunities and eventually crash the mainstream party, wireless LAN vendors will have to improve interoperability, lower prices and raise network throughput.

Right now wireless LAN cards from one vendor will not work in other vendors' environments. Users resent being tied to single-vendor implementations and worry about betting on the wrong horse.

Openness should foster competition and lower prices. Current wireless network interface cards cost $500 to $600. While users save on the cost of wiring, analysts agreed that a $200 adapter is the key to attracting a wider circle of buyers.

Although wireless LANs will never match the speed of wired options, they must boost their speed to tackle more demanding jobs. Most current wireless LANs operate in the 256K to 512K bit/sec range, and observers said a minimum of 1M bit/sec is needed to expand beyond electronic mail, light file sharing and printer sharing.

Still, wireless networks will never be fast enough for multimedia and large file transfers, Dayem said.

"Will wireless nets [ever] replace wired nets?" Dayem asked. "The answer is no." But they will be able to take LANs into places they might not otherwise be able to reach, he added.

MASH units get advice

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they are compressed and stored using Adobe Systems, Inc. PhotoShop software.

Medical personnel in Zagreb then transmit the records, including the images and the findings, over land lines to Germany or the U.S., where they are stored with the patient's record in the Quadra 950. Resident staff with expertise in various medical fields can then review the files as necessary.

The Army is keeping an International Maritime Satellite Organization (INMARSAT) portable satellite transmitter on hand as a backup should the land lines fail in Croatia. In Somalia, the U.S. Army had to rely completely on the INMARSAT portable devices.

Army field doctors can also use the laptops to download medical opinions as well as general clinical information, such as the Medline database frequently used by doctors for diagnoses.

The innovations from the telemedicine team at Walter Reed could also be used here in the U.S., according to Fred Copem, chief of clinical automation at Walter Reed.

"Perhaps one day there will be plenty of stateside applications like this serving out-of-the-way places like Appalachia," he explained. "When every doctor has a computer on his desk, they can share the images and consult over a network with their colleagues."

Novell, Retix team on NLM

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James Neiser, associate vice president of marketing at Retix.

The new NLM will enable users of any mail system with a link to MHS to access various public and private electronic mail systems, said Phil Schacter, product-line manager for messaging interoperability products at Novell. He added that Novell customers seem most interested in using the product to tie into public services that support X.400 or into minicomputer-based E-mail systems.

Retix X.400 for NetWare Global MHS is priced at $6,995 and will be available in August through Novell's distribution channel.

Developers' kit

The X.400 OEM Development Kit that Retix used to build its X.400 NLM includes the Novell Protocol Access Module, OSI transport software, an administration tool and a programmers' reference manual.

Novell officials said Firefox Group of the U.K. is among the other vendors considering using the X.400 OEM kit, available now.

Retix: (310) 828-3400; Novell: (408) 434-2300.

Store & Forward

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client/server systems management software. The acquisition, conducted via a stock swap worth more than $19 million, leaves Compuware with an entree into the client/server market, while EcoSystems will gain the funding and distribution channels it needs to move forward with its product line.

EcoSystems, which was founded in 1991 and began selling its EcoSphere and EcoTools products in December, had no revenue and a loss of $1.5 million last year.

The acquisition is subject to regulatory approval and the approval of EcoSystems shareholders.

The **X.400 Application Program Interface Association (XAPIA)** has announced that it will develop additional calls for its Common Mail Call APIs, which are designed to provide electronic mail connectivity between different desktop applications. The Common Mail Calls specified so far are for simple sending and receiving of messages. XAPIA has yet to decide which calls to add.

Meanwhile, the association is evaluating how to integrate its specifications with those from the Vendor Independent Messaging (VIM) consortium.

TP moving to client/server

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needed either to support terminal I/O, provide immediate response or service multiple users simultaneously would automatically qualify as a transaction processing application. Everything else, by default, was a batch application.

However, as the mainframe became more powerful and CICS reached new records in performance benchmarks, people began to deploy transaction processing applications that should have been done in batch. People used to run transactions and update records in the background transparently to users. They abused the notion of an OLTP system.

On the other side of the spectrum, people who grew up developing desktop applications never confronted the notion of a transaction until perhaps a few years ago. These people never had to build applications that never lost a record or had security mechanisms to accommodate thousands of users going after the same data.

However, now that relational database management systems have mushroomed in popularity and companies are downsizing applications off the mainframe, these developers are being forced to learn transaction processing concepts. The developers now have to evaluate whether they need a TP monitor and which Unix-based OLTP is best for their environment.

This is not an easy transition because client/server movement has muddied the definition of a transaction. Is a request from a client to a server a transaction? The definition of a transaction is in flux right now.

When will users begin deploying client/server-based TP systems?

There are two things that need to happen. First, we need industrial-strength [OLTP] products that support desktop computing. To date, the only mature and proven OLTP product is USL's Tuxedo.

However, IBM's OpenCICS, Transarc's Encina and NCR Corp.'s Top End are catching up and will be on par with Tuxedo in the next couple of months.

Second, users need to build more decision support systems, which are generally client/server applications without transaction processing semantics. Once users are comfortable with client/server technology, they will begin exploring how to migrate mission-critical transaction processing applications to a client/server platform.

The next wave of client/server computing is transaction-based. As Unix-based OLTP products mature, users will begin downsizing transaction processing applications from mainframes to client/server platforms.

The Unix OLTP products will deliver virtually the same level of availability, reliability and serviceability as mainframe-class OLTP systems, such as IBM's CICS. But they will also offer superior price/performance over mainframe systems and be able to support [graphical user interface]-based front ends instead of character-based terminals.

Users will be able to have their cake and eat it, too.

How do you know whether you need a TP monitor?

Technically speaking, you don't need a TP monitor if you use a database management system that conforms to the X/Open Company, Ltd.'s XA transaction processing protocols. XA protocols define transactional methods, such as two-phase commit.

If all your databases are XA-compliant, then you don't need a TP monitor to coordinate updates across heterogeneous databases. You simply appoint one database to function as the TP monitor, or resource manager, to coordinate the update across all databases.

So why do you need a TP monitor at all?

There are many reasons to implement a TP monitor that go beyond the need for data integrity and two-phase commit. Strategically, TP monitors provide database independence, allowing users to change databases in a plug-and-play fashion. It's not wise to rely on a single database vendor to coordinate updates among heterogeneous databases.

TP monitors also support large numbers of concurrent users and utilize computer resources more efficiently than database management systems. TP monitors are excellent multiplexers. They all have embedded logic that allows them to efficiently share back-end database threads among many transactions.

In addition, TP monitors provide:

- Access to nonrelational data sources, where about 70% of all corporate data is stored.
- Superior security, including different levels of authentication, allowing you to protect business processes, not just data.
- On-line administration for reconfiguring system resources.
- Troubleshooting and diagnostic capabilities to monitor, control and audit system resources.
- Naming and directory services.
- Compatibility with front-end client/server development tools.

For example, there are more than a dozen client/server tools that support USL's Tuxedo. The tools allow users to develop OLTP applications with Tuxedo as a back end.

So when can you do without a TP monitor?

Users can get away without using a TP Monitor if their application supports about 10 to 20 client workstations and one or two database servers running on the same platform. Essentially, you don't need a TP monitor for small-scale, straightforward transaction applications that aren't likely to grow in size over time.

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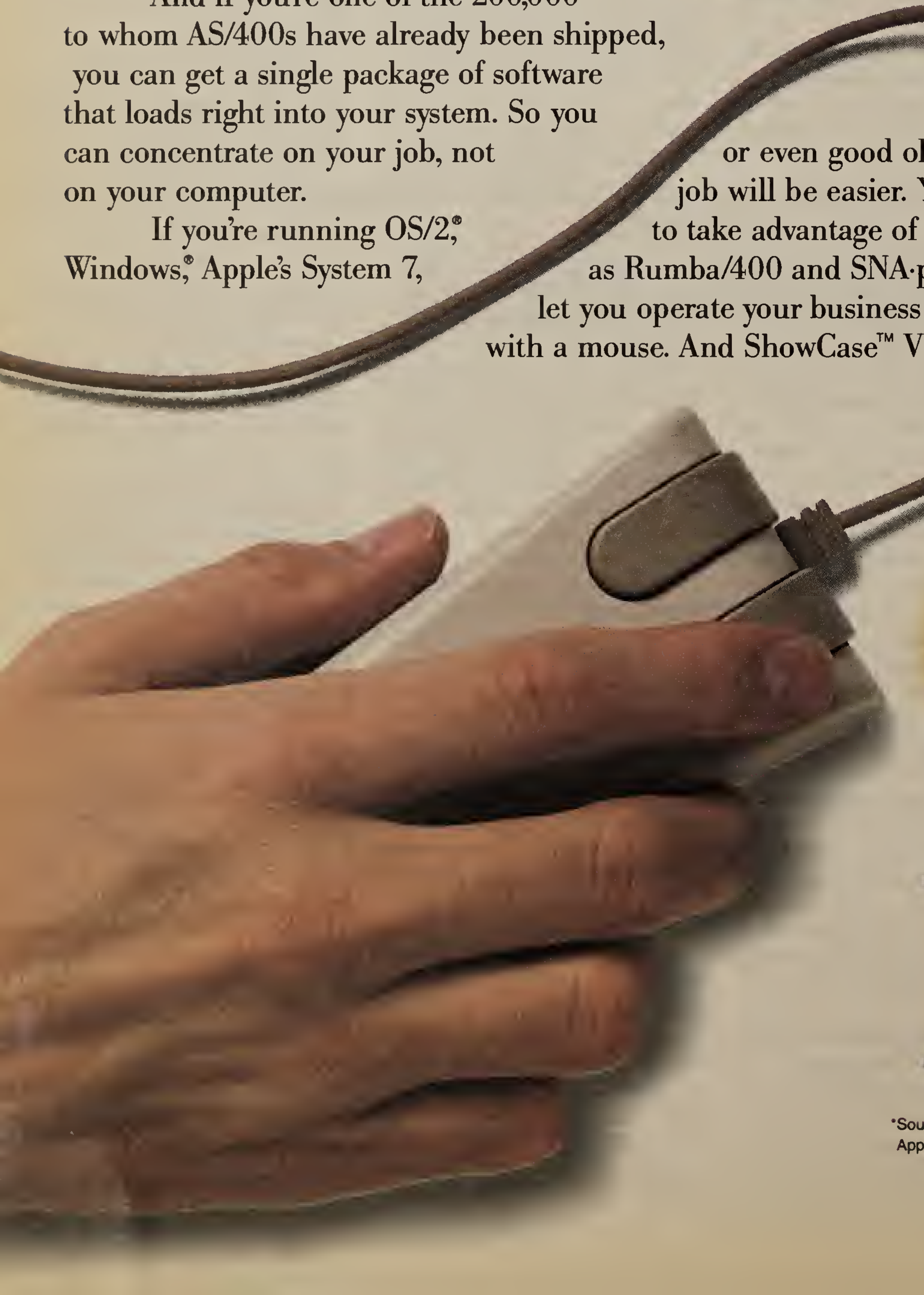

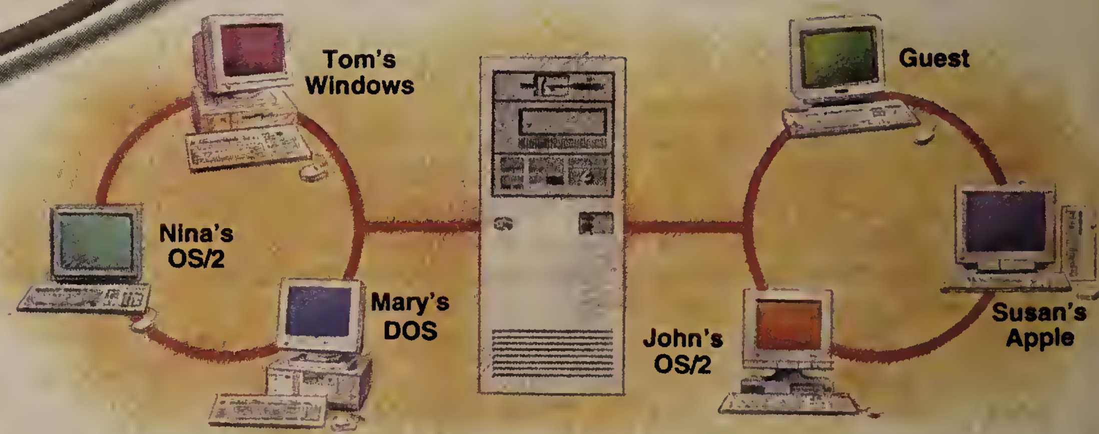

Whether you're working in OS/2, Windows 3.1, Apple or DOS, AS/400 Client/Server lets you get to data and applications anywhere in the network.

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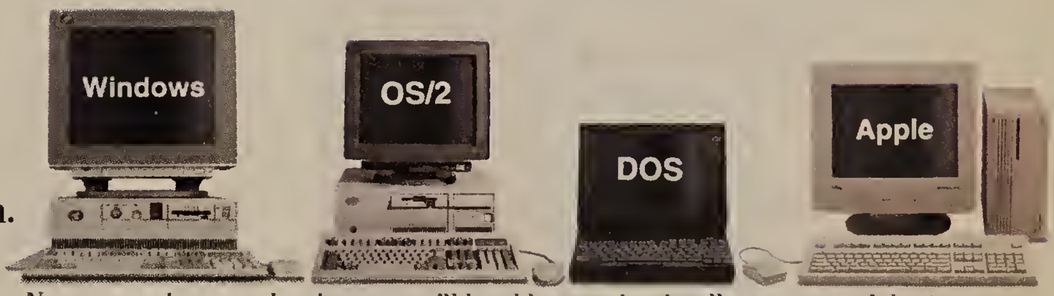

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MANAGEMENT STRATEGIES

MANAGING PEOPLE AND TECHNOLOGY: USER GROUPS AND ASSOCIATIONS

Worth Noting

A survey of top executives at 269 firms in 10 states representing all industry groups shows that 85% of the respondents are considering outsourcing, downsizing or rightsizing data center operations. The survey was conducted for MCC Corp., an information processing service bureau in Murray Hill, N.J.

Manager Minutes

Compass Computer Services of Beverly Hills, Calif., announced that it has signed a facilities management contract with **Litton Computer Services**, a division of Litton Industries. Compass is owned by and provides reservation and data processing services to **Budget Rent a Car Corp.** and **Hilton Hotels Corp.**

Under the contract, which is expected to run for seven years at an estimated total value of $100 million, Litton will manage Compass' data center in Carrollton, Texas.

The **Information Systems Security Association (ISSA)** has published "The Guideline for Information Valuation," a document aimed at helping security information officers within organizations identify and place a value on a company's internal information in order to construct and justify investment in security programs. The ISSA publication costs $95 for members and $195 for nonmembers and can be bought by calling (312) 644-6610. ◘

Technology-based training: the players

Computer-based training		
Applied Learning Systems, Inc.	(612) 921-8383	(800) 995-5327
Bellcore Training & Education Center		(800) 832-2463
CBT Systems USA, Ltd.	(415) 737-9050	(800) 929-9050
Cooper & Associates, Inc.	(603) 433-2242	(800) 542-2242
Ericsson Systems Expertise, Ltd.		011-353-1-280-0455
Novell, Inc.		Novell or any Novell reseller
Reference Point	(203) 272-7216	
Sanctuary Woods, Inc.	(613) 228-8232	
The Saratoga Group	(408) 446-9115	
Video-based training		
Halverson Associates, Inc.	(313) 729-0325	(800) 537-1641
James Fox Associates	(215) 598-3293	
Phillips Business Information, Inc.	(301) 340-2100	(800) 666-4266
TCT Technical Training	(408) 735-9990	(800) 743-9990
Technology Interchange Group	(201) 478-3606	
Teledec, Inc.	(708) 575-8332	(800) 366-8332
Computer and video-based training		
AT&T National Product Training Services		(800) 872-4637
Telephony Books	(913) 967-1734	(800) 543-7771

The above companies offer training programs on topics including LANs, NetWare, SNA, ISDN, frame relay, telephony, X.400 and X.25.

GRAPHIC BY SUSAN J. CHAMPENEY

Rivals Fedex, UPS bring battle to high-tech arena

Firms demo network-based customer services.

By Bob Brown
and Fredric Paul
Network World Staff

ATLANTA — Federal Express Corp. and United Parcel Service of America, Inc. recently took their battle off the streets and onto the trade show floor at Comdex/Spring '93 here, where they both showcased how network technology supports their services.

Unlike most exhibitors at the show, the two package delivery giants did not have computer products to sell. Instead, both hoped to demonstrate how they use technology to give their shipping services a competitive edge.

Federal Express demonstrated new and existing network-based customer service offerings, including PowerShip 3, a desktop shipping system provided free of charge to customers that send as few as three packages a day.

Federal Express hopes the system will generate more business by making it easier to ship packages.

The system lets users store frequently used addresses on a personal computer, print shipping labels and send for a courier without using the phone. The PowerShip 3 client PC is linked via a dial-up line to a Sun Microsystems, Inc. SPARCserver located at a Federal Express site, where real-time information for routing packages is processed. Customers can also dial in to track packages.

Federal Express also demonstrated FedEx Tracking Software, a DOS, Windows and soon-to-be Apple Computer, Inc. Macintosh package that can be loaded on to a customer's existing PC for tracking packages via the Federal Express network.

UPS, meanwhile, demonstrated its own Maxiship and Maxitrac programs.

With Maxiship, initiated in 1989, high-volume UPS customers get computers, printers and UPS software that make it easier to create custom shipping manifests and management reports. About 8,000 customers now use Maxiship, and UPS expects 20,000 users by year end.

Maxitrac, which debuted in 1991, lets users employ their own PCs to tie into UPS' computer network to instantly check the status of any package they have shipped. Users can display actual receipt signatures on their PC screens for confirmation of delivery.

Other high-tech products on display at Comdex included the Delivery Information Acquisition Device, an 11- by 14-in. handheld computer that electronically collects pickup and delivery information as well as customer signatures. ◘

Train your staff to be net superpeople

Computer- and video-based training tools offer inexpensive education on a range of net topics.

First in a two-part series.

By Jim Cavanagh
Special to Network World

In *Superman — The Movie,* Clark Kent's father stored the learning, wisdom and experience of ages in green knowledge crystals. The crystals were used as a vehicle to transfer his knowledge to Clark, enabling his son to become Superman. The knowledge was more than mere "matters physical and historic" and included sights, sounds and interactions that helped Clark begin to discover his superhuman powers.

In our world of communications and networking, there exists the analogue of Clark's green knowledge crystals — technology-based training (TBT), which includes a wide variety of video- and computer-based training products. TBT allows experts to capture their knowledge of a particular area and deliver it to students in a format that facilitates learning and retention. Also, TBT may be repeated at no charge and delivered more cost-effectively than traditional instructor-led training.

The goal of TBT is the same as the goal of the knowledge crystals: to capture knowledge and pass it along to others, allowing them to develop their own great powers. In this case, it means to allow them to become net superpeople.

TBT basics

TBT encompasses a broad spectrum of products, from simple training videos to elaborate multimedia products, and a range of subjects, from appliance repair to pilot training. Though TBT products range from a couple of hundred dollars to more than $100,000 and can be run on everything from home computers to elaborate multimedia workstations, this article will be limited to TBT that can be implemented easily and inexpensively with off-the-shelf personal computers and low-cost video players.

Sometimes, TBT is used as the sole method of delivering training, as a prerequisite to classroom instruction or as a supplement to traditional "stand-up" training. Many networking professionals make time to visit TBT media centers, some use TBT at their own desks, and others prefer the quiet off-hours at home to review videos and animated PC programs on various subjects.

Today, TBT provides primary job training as well as cross-training in nonprimary job functions. Training creates more well-rounded employees who are better equipped to deal with a variety of situations. Employee morale and quality of work improves, costly turnover decreases and the high costs typically associated with training are brought under control.

There are three basic types of TBT products that fall within the parameters we identified: video-based, computer-based and hybrid video/computer-based.

TBT programs vary widely in their format, cost and audience, so it is important to shop carefully. Most publishers have a demonstration tape or disk that is available at no cost or for a nominal fee. Many publishers, such as CBT Systems USA, Inc. and Phillips Business Information, Inc.'s OMNICOM, offer rental programs, as well. These options are made available so investigation of TBT can be concluded with a minimal initial investment.

Video-based training

Video-based training can be as simplistic as videotaped instructor-led training, such as the OMNICOM training videos that capture a live class with Hal Folts, or as elaborate as a television special or techno-miniseries, such as the videotaped portion of AT&T National Product Training Services' Telessentials Curriculum.

Video allows the use of animation to clarify technical points, as well as the chance to take students places they would not ordinarily be able to visit, such as a wiring closet or telephone company central office. Video also offers an excellent opportunity for customization because custom segments can be developed and

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Train your staff to be net superpeople

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edited in with the "stock" footage for greater training impact, as is the case with many of the custom video training projects produced by James Fox Associates.

All video-based training packages in the accompanying graphic on page 31 are available in a VHS format. Many are available in European PAL and industrial ¾-in. formats, as well.

Computer-based training is shaking its early reputation as "electronic page turning" and coming on strong as an important training technology. Modern computer-based training uses color graphics, on-screen animation and customizable training paths through the material to reinforce learning.

Cooper and Associates, Inc.'s newer Teletutor courses, for example, are being developed using a powerful proprietary delivery format called InfoMatrix. This format allows custom training paths to be developed, provides access to the course material by topic and uses an in-context glossary feature.

The power of the computer is also put to good use in many of the courses by an extensive testing capability that asks many questions and redirects a student's efforts to material that is not understood or skips material with which the student is already familiar. That feature is offered by a number of courses and is a highlight of AT&T's Telessentials.

Most computer-based training material is available in a DOS version, with a limited number of courses also available for the Apple Computer, Inc. Macintosh.

Most publishers offer a choice of various diskette formats, and many products will operate on fairly simple PC hardware configurations, such as a color graphics adapter monitor, 512K bytes of memory and less than 1M byte of available hard-disk space. In addition, the more sophisticated computer-based training programs require VGA monitors, mouses, at least 640K bytes of memory and several megabytes of disk storage.

Hybrid

A third type of TBT package offers a hybrid of video- and computer-based training. The only widely publicized product that incorporates the two methods in a single product is AT&T's Telessentials, which unites information-rich computer-based courseware with professionally produced video segments.

The student begins with the computer-based training portion of the Telessentials course, which utilizes full-color images and informative text to explain the foundational aspects of telephony, Integrated Services Digital Network, AT&T products and other related subjects. At certain points in the course, the student is directed to video segments showing things that would be difficult to display on the computer screen or other segments. Video- and computer-based training are well coordinated and reinforce each other.

As Rex Shupert, instructor for Ameritech Services, Inc. in Indianapolis, explains, "The video segments break the course up. The students like a chance to take a break from the computer screen and go watch TV for a while. We've been using the Telessentials material as a part of our curriculum since August 1990, and the post course evaluations have been very high." ◻

In the second part of this series, the author will take a closer look at how companies are using TBT and the benefits they are receiving.

Cavanagh is an Atlanta-based regional applications engineer for a manufacturer of fast packet and frame relay networking systems and has been using TBT since the mid-1970s.

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NETWORK WORLD'S R.A.F. READER ADVOCACY FORCE

What's the difference between Interop and ComNet?

Interop is local.

ComNet is global.

Networking is the hot topic of the nineties, but who has time to go to a dozen networking trade shows?

The two big networking shows.

If you've got the time, you ought to be at both Interop and ComNet. If not, there's an easy way to decide which show is for you.

Interop is basically a local area network show focusing on technical "interoperability" issues. Important issues, to be sure, but not the big picture.

ComNet is a global internetworking show focusing on company-wide enterprise networking. It covers the latest technologies like ATM, Frame Relay, SMDS, FDDI, and mobile data communications that are shaping the new enterprise.

And deals with real-world solutions like imaging, voice, data, workgroup and database applications that are driving the technology.

Produced by IDG World Expo.

Furthermore, ComNet is produced and managed by IDG World Expo, the world-wide leader in professional conferences and expositions for the information technology industry... including ComNet Prague, EuroComNet and ComNet Korea. It is part of International Data Group (IDG), the leading global provider of information services on information technology.

IDG World Expo brings the full support of IDG publications including *Computerworld, Network World, Federal Computer Week, InfoWorld,* and *CIO* in providing exhibitors with the highest quality attendee promotion.

If your company is global, or thinking of going global, then ComNet '94 ought to be in your tradeshow plans. It makes good sense, since 45% of the people who went to ComNet last year already have multi-national networks.

Not just technical people.

ComNet is a show for decision-makers.

3Com's John Covert said, "What we're seeing are the principal network people who are really on the firing line, or the people who have to make the decisions for next-generation technology."

Jim Warner, marketing director for the Network Management Forum and frequent ComNet participant said, "At ComNet the quality of attendee is very high. The collective purchasing power of ComNet's enterprise network management audience is unsurpassed."

According to the latest independent audience surveys of the two shows, 47% of ComNet attendees are from companies that spent $1 million or more on networking equipment in 1992, vs. 36% for Interop Fall.

First show of the year.

Traditionally, ComNet is the launching pad for new networking products. At ComNet '93, half of the 450 exhibitors introduced 288 new products.

ComNet '94 will be held January 24-27, 1994 at the Washington Convention Center in Washington, D.C.

For information about exhibiting or attending, return the coupon or call **800-225-4698.**

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OPINIONS

LEGAL ISSUES

BY JEFFREY NEUBURGER AND RICHARD RAYSMAN

Company E-mail policies are crucial for proper usage

Companies that use electronic mail would be wise to enact E-mail policies to prevent expensive and troublesome problems. These policies should address, at a minimum, company concerns regarding control of the contents of E-mail messages, employees' privacy expectations, access to and disclosure of E-mail messages, and legal requirements for E-mail retention. Enacting such policies is crucial to ensuring that a company's E-mail activities are in compliance with the law.

It's important to make employees aware that E-mail is for business purposes only. Inform employees that these messages are considered company records and, therefore, should be transmitted only to individuals who have a business need to receive them. Distribution lists should be used carefully and updated regularly to reflect changes in responsibility or employment status.

E-mail policies should allow authorized third-party access to E-mail messages. Under the law of some states, employees have a right of privacy in their E-mail messages, unless they waive this right.

For example, Article 250 of New York's Penal Law, titled "Eavesdropping," prohibits intercepting or accessing electronic communications without at least one party's consent.

A company's policy should state that all employees automatically waive their right to privacy and they consent to access and disclosure of E-mail messages.

Make it clear to employees that E-mail messages should be treated like shared paper files, with an expectation that anything in them is available for review by authorized representatives of the company. The company should also reserve the right to disclose E-mail messages to law enforcement officials or other third parties without notifying any of the parties to the messages.

An E-mail policy should also prescribe a maximum period for the messages to be retained. This time period should take into account all legal obligations regarding the company's retention of records. This will protect your company from charges of improper destruction of records during a pending investigation or litigation.

Under the law, a company will usually be required to save relevant records during such a proceeding. If, however, the company destroyed E-mail messages after the prescribed retention period, it cannot be accused of improper activity.

An E-mail policy is a crucial tool in the new electronic communications age. It can give a company confidence that its electronic records are not being corrupted with extraneous, and potentially damaging, material. It will allow a company to protect its interest in its electronic records, while avoiding the violation of any laws or privacy expectations. Finally, it will assure a company that its record retention policies are wholly in accordance with the law. ◻

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EDITORIAL

ICA members should ask: Where were you?

The conference business is a numbers game, and that fact isn't lost on the International Communications Association (ICA), one of the largest independent user organizations in the network field.

During the past few years, the ICA has seen a significant decline in the number of vendors exhibiting at its annual conference. That's a big concern for the group, which relies on show revenue to drive its educational and philanthropic efforts.

The nonprofit ICA can't generate the attendee numbers that big conference companies, such as Ziff-Davis Exhibitions (INTEROP), Bruno Blenheim, Inc. (NetWorld) or International Data Group's World Expo Corp. (ComNet), can.

At its most recent event in mid-May, the ICA drew more than 8,300 attendees — a 25% hike over last year. But that pales in comparison to mega-shows such as INTEROP, which pull in three or four times as many folks to walk the exhibit floor. In this numbers game, more attendees means more exhibitors. That's trouble for ICA and any user group relying on conference cash.

When you attend or exhibit at ComNet or INTEROP, the profit goes into someone's pocket.

When you attend the ICA show or exhibit there, your money aids users in dealing with the challenges of their changing jobs and helps a whole new generation get its start in the field. During the past three years, ICA paid out $715,000 in scholarships to 25 universities. What's more, its active involvement in public policy issues has saved all users millions of dollars in the past few years alone.

ICA members have to turn this numbers game to their advantage. ICA currently has 2,200 representatives from some 650 member companies with average annual network budgets exceeding $40 million. ICA members ought to make sure vendors know about that spending power and how important it is for a supplier to support the show and the group. A good time to discuss it is during the buying process.

Ask vendors, How can I support your organization if you won't support mine? ◻

THE BLUE VIEW

BY ANURA GURUGE

IBM should focus on winning user acceptance for APPN

Advanced Peer-to-Peer Networking (APPN) is at a crucial juncture in its lackluster seven-year existence. Controversy about its openness — despite the publication in March of the long-anticipated Architectural Reference — continues to smolder, fanned by the recent introduction of the $25,000-per-year APPN Technology Package for non-IBM implementors.

Openness, however, should no longer be IBM's major concern regarding APPN. Instead, IBM should be looking for ways to combat Systems Network Architecture users' continuing apathy toward APPN.

Ironically, IBM's new host and OS/2 Multiprotocol Transport Feature (MPTF) has the potential to increase SNA user's apathy toward APPN. MPTF permits SNA LU 6.2 applications — as yet the only potential clients for APPN — to run across Transmission Control Protocol/Internet Protocol, in addition to SNA or APPN.

This presents LU 6.2 users with an intriguing choice: Do they stay with SNA and then migrate to APPN, or heed the clarion call of open networking and standardize on TCP/IP, using MPTF to run LU 6.2 applications across TCP/IP? The answer is not clear-cut, and IBM is very remiss in not offering, as yet, guidelines or empirical data that would help SNA users make this decision.

If the MPTF-induced dichotomy isn't bad enough, IBM is further confusing potential APPN users by now talking about APPN High Performance Routing, known as APPN+. While the growing band of potential APPN implementors is aware that APPN+ will be totally transparent to end users and LU 6.2 applications, it's a big mistake for IBM to assume that this is obvious to the folks who count the most — potential APPN users. While IBM's promotion department has been doing an admirable job increasing industry awareness of and involvement in APPN, their efforts have been concentrated too much on the vendor community.

It's time for IBM to focus its attention on potential APPN users. While vendor interest and participation is a prerequisite, without users, IBM does not have a market for APPN. And the albeit sketchy market research available regarding APPN acceptance is not, by any stretch of the imagination, encouraging.

> Openness should no longer be IBM's major concern regarding APPN.
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A survey of 202 U.S. IBM users, conducted last year by Framingham, Mass., market research firm International Data Corp., shows that less than 10% have a critical requirement for APPN, while only another 40% have any interest in APPN. And a survey of 969 IBM and IBM-compatible users around the world, conducted late last year by market researcher Xephon PLC of Newbury, England, shows that only 8% of the respondents are already using APPN and only around 23% plan to use it in the near future.

For APPN to succeed, IBM needs to focus solely on winning customer acceptance. All other issues, such as the merits of APPN vs. Advanced Peer-to-Peer Internetworking, APPN vs. MPTF-facilitated TCP/IP, or whether End Node (EN) implementors, like Network Node (NN) implementors, should have to buy IBM's APPN Technology Package, are immaterial. Without customers, all of this is mere rhetoric.

The APPN Technology Package issue seems to be particularly distracting. It would be best for IBM to nip this in the bud, at least as it applies to EN implementors. Fortunately, there is an easy solution. Last year, three years after it was introduced, IBM dropped the $8,000 license fee for non-IBM implementations of its strategic Common Programming Interface for Communications application program interface. Why not do the same for APPN EN implementations, if not for NN implementations? By all means, get implementors to register and attend implementors' workshops, but put a stop to this debate about fees. All this talk of money seems to be having a negative effect on customers.

IBM should stop this infighting, or at least put it on hold, and instead pour all of its energies into convincing customers that APPN is a viable and attractive technology. Because without customers, APPN could end up being the Esperanto of the networking world — a great concept that no one actually uses.

Guruge is an independent consultant specializing in internetworking and IBM network architectures. He writes extensively, presents seminars worldwide and can be reached at (603) 878-1303 or via Internet/MCI Mail at aguruge@mcimail.com.

TELETOONS

BY FRANK AND TROISE

LETTERS

MCI service underrated

In your article "GEICO consolidates traffic under AT&T" (May 31, page 25), the essence of why GEICO chose AT&T is well stated. However, one quote in the last paragraph needs correction. While GEICO believes AT&T has provided superior customer service and support over all competitors, neither I nor GEICO are "unimpressed with MCI's customer support."

Much effort has been provided by MCI Communications Corp. over the past few years to establish itself as a significant partner in GEICO's world. MCI customer support has been substantial and has been highly regarded.

Jess Reed
Assistant vice president
Telecommunications
GEICO
Washington, D.C.

Democracy in action

In your editorial on standards (May 10, page 36), you seem to be trying to substitute one ideal world (Open Software Foundation, Inc. rules) for another (vendor and consortia rules). Standards become standards in that crucible of democracy, the marketplace.

OSF does not create standards — it suggests them. It is then up to vendors to incorporate these standards into products. Only then does the standards-setting voting begin. Some standards candidates win fast, some die fast, and some just hang on to cause irritation.

This reality of the marketplace as the final determinant punishes overengineering and lousy engineering, and rewards things that work economically. I, for one, believe that this is a fair and self-correcting system.

Craig Dupler
Integrated Workgroup
Technology
The Boeing Co.
Seattle

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To obtain a survey form, call Kyle Nitzsche, associate features editor, at (508) 820-7427. Requests for survey forms must be received by Monday, June 14. Please call to request your survey form today.

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800 free agency

Carriers bidding for business with mix of freebies, advanced features and promotions.

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Users exercising their rights under portability to declare free agency in the 800-services market better be ready for carriers to come banging on their doors waving incentive-laden contracts. Some of the opening bids for signing on with a new carrier include: protection against penalties for breaking an existing contract, free Responsible Organization (RespOrg) service, service guarantees and access to advanced routing features.

Such bids can be reason enough for even the most satisfied toll-free customer to consider declaring free agency. After all, with an estimated $7 billion in annual revenue at stake, carriers will be doing almost anything to sign up new customers. They will also be more quick to roll out innovative and advanced 800 features to gain a competitive edge.

Portability indeed introduces a higher level of competition to the 800 market by giving users the chance to seek out the best deal without losing control of their current toll-free numbers.

It also enables users obtaining 800 service from one carrier and all other services from another to dangle all their traffic in front of carriers in search of deeper discounts. Users should plan new 800 contracts to expire at the same time existing outbound contracts expire to play this bargaining chip.

Gone are the days when number lookup limitations on local exchange carrier switches forced Bell Communications Research to assign control over groups of 800 numbers to different carriers, which forced users to strike a deal with the carrier that controlled the numbers they wanted.

Now all 800 numbers and call routing instructions are kept in a Bellcore-managed nationwide database called the Service Management System (SMS).

Copies of this database are downloaded to local exchange carrier service control points (SCP). When an 800 number is dialed, the local exchange carrier queries its SCP 800 database using Signaling System 7 (SS7) to find out which long-haul carrier provides service for that number and passes the call off to that carrier.

Changes to the 800 database can only be made by the SMS. A user's RespOrg feeds requests to Bellcore to do such things as activate, deactivate or change the carrier for an 800 number. Those changes are entered into the SMS, which then downloads updates to local exchange carrier SCPs (see graphic, page 40).

As of May 1, only 2.5 million out of a possible 8 million 800 numbers were in use.

By DANIEL BRIERE and MARK LANGNER

With this new technical setup and the ability to offer customers the 800 numbers of their choice, more carriers are entering the 800-services market or strengthening their toll-free offerings.

"Until portability, there were really only three national providers of 800 services: AT&T, MCI and Sprint," says Mark Heckendorn, managing director of Versus Strategies, Inc., a consulting firm in Washington, D.C. "Now, end users can choose from a wide variety of providers, including mixing and matching combinations of providers to achieve national coverage."

In recent weeks, companies such as Cable & Wireless Communications, Inc., Metromedia Communications Corp. and WilTel have stepped forward to offer 800 service on a national basis.

Local exchange carriers are also getting into the act, although they are limited to competing for intra-local access and transport area traffic.

For instance, Pacific Bell opened a new 800 service center, slashed 800 rates, waived installation fees and offered credits of as much as $100 on some services in an effort to woo new customers.

Even as they pursue 800 service free agents, car-

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riers are hard-nosed about allowing customers out of existing contracts. Users trying to break free from an existing pact should expect to pay any and all termination penalties, meaning they need to carefully figure out if the benefits of exercising portability rights offset the cost of changing carriers.

About the only users not at risk of penalties are AT&T Tariff 12, Tariff 16 and Software-Defined Network Remote Access customers that have 800 service bundled into their contracts. Those users are covered by the Federal Communications Commission's Fresh Look order, which gives them until July 29 to switch carriers without incurring penalties.

However, even customers exercising their Fresh Look option need to be on their toes. This is because under tariffs AT&T filed with the FCC, customers that have not switched all 800 traffic to a new carrier by July 29 will be hit with increased usage fees of up to 20% on any traffic that continues to be carried by AT&T.

MCI Communications Corp. is offering protection against AT&T's action to any user ordering a shift of traffic to its network under Fresh Look by June 15. Under its Fresh Look Guarantee program, MCI promises that the cutover will be completed by July 29 or it will pay the difference between AT&T's old and new rates plus 15% of the difference a month until all traffic is switched over.

But users don't have to switch all their 800 traffic to a new carrier. Under portability, customers can opt to route calls to a single 800 number over different carriers, based on such criteria as geographic areas, time of day or day of week.

> “Disaster recovery is important, but I didn't want to be the first to split traffic.”
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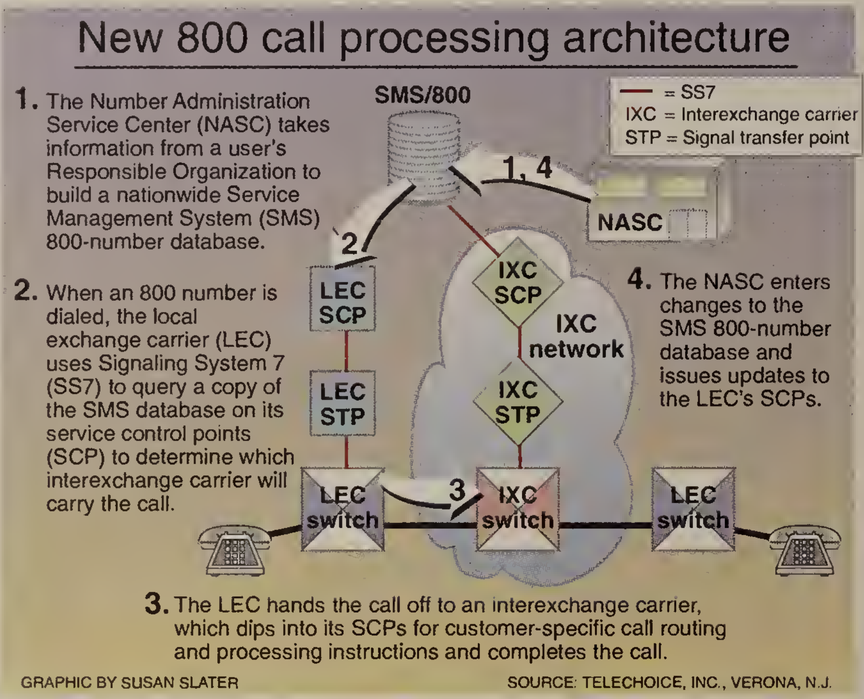
The decision to split traffic among multiple carriers is not an easy one. It may enable users to squeeze carriers for better service or freebies by pitting them against each other to win a higher percentage of overall traffic. But that could result in vendor management nightmares by upping the number of carriers with which the user has to deal.

To avoid these nightmares, some users are consolidating their existing 800 numbers with a single carrier. “We have been moving toward MCI for 800 service for some time,” says Paula Zeman, director of customer service for Medline Industries, Inc., a Mundelein, Ill., medical supply company.

“But we had left older 800 numbers with AT&T. Portability has allowed us to move those numbers to MCI, as well,” she said.


New 800 call processing architecture

1. The Number Administration Service Center (NASC) takes information from a user's Responsible Organization to build a nationwide Service Management System (SMS) 800-number database.

2. When an 800 number is dialed, the local exchange carrier (LEC) uses Signaling System 7 (SS7) to query a copy of the SMS database on its service control points (SCP) to determine which interexchange carrier will carry the call.

3. The LEC hands the call off to an interexchange carrier, which dips into its SCPs for customer-specific call routing and processing instructions and completes the call.

4. The NASC enters changes to the SMS 800-number database and issues updates to the LEC's SCPs.

GRAPHIC BY SUSAN SLATER

SOURCE: TELECHOICE, INC., VERONA, N.J.

Traffic splitting also offers disaster recovery options, especially if the traffic is split along geographic lines. If one carrier's network fails, toll-free calls from other areas can continue coming in while that carrier tries to turn service back on.

Alternatively, calls from the affected region can be rerouted to an alternate carrier through a quick change to the SMS database.

But users aren't jumping on the traffic-splitting bandwagon. National Westminster Bancorp of Jersey City, N.J., was weary of traffic splitting when it switched all its traffic from New York Telephone Co. and AT&T to MCI.

“Disaster recovery is important, but I didn't want to be one of the first to split traffic,” says Patricia Ryan, the bank's vice president of telecommunications management. “I'm waiting several months until carriers have concrete plans to support [disaster recovery] before splitting traffic.”

Carriers are doing what they can to discourage splitting, including sweetening discount and term plans in exchange for all of a customer's traffic. For instance, a user spending $1 million a year in 800 service can get an average discount of about 26%. But if the traffic is split into two $500,000 pools and given to different carriers, the average discount is only about 22%.

Some carriers are even charging fees to discourage splitting. For instance, when AT&T acts as a user's RespOrg, it passes on to users a half-cent per-call local exchange carrier charge for performing the 800-number lookup for traffic that is handed off to another carrier.

While MCI and Sprint Corp. say they will not pass these costs on at all, users should get this commitment written into the contract. These costs are based on per-call attempt, not per-call completion. So for users with high call abandonment rates, splitting traffic could get expensive if the RespOrg passes along local exchange carrier charges.

Customers that choose to split traffic have new or enhanced 800-service management offerings available from the Big Three long-haul carriers.

MCI's new TrafficView service enables users with an MCI Configuration Management terminal to pluck calling pattern and volume information from an MCI management system. The information can be used to plot changes in call routing tables and therefore optimize service.

AT&T has provided similar network management capabilities through its Routing Control Service, which enables customers to tap into AT&T management systems and obtain 800 call detail information, as well as change 800 call routing tables via an Accumaster Services Workstation.

Sprint's 800 Call Director, the first module of its Insite Executive network management platform, enables customers to tap into Sprint systems to create, change and activate enhanced 800 call routing plans.

Accepting full responsibility

Users that want even more management control over their 800 services can act as their own RespOrg. This gives them the ability to reserve 800 numbers, create and update their service records, and perform maintenance activities such as tracking and clearing network trouble tickets.

Users willing to take on this task can rely on carrier-provided tools, such as MCI's TrafficView, AT&T's Routing Control and Sprint's 800 Call Director. Users that have split their traffic must obtain a management tool from each carrier they use because the carrier tools do not interoperate.

“These are important tools as they allow customers to make a gradual migration to one carrier, as opposed to making a flash cut all at once,” says L. Thomas Walton, president of Walton and Walton Associates, a consulting firm in Richmond, Va. “Anyone with an important application will want to dip their toes in the water first.”

But many users don't want the bureaucratic nightmares involved with tracking and maintaining the databases for 800 service. Instead, most early portability implementors are choosing their primary 800 carrier as their RespOrg.

The primary criteria used for choosing a RespOrg are largely the same as those used to pick a provider of any other service. The ability to understand and support a user's business is key, as well as flexibility and responsibility.

“A RespOrg is very important,” says National Westminster's Ryan. “You want a company that knows the way you use every 800 number.”

There can be a cost involved with choosing a RespOrg, depending on who your carrier is and whether you are splitting traffic. For instance, AT&T will offer RespOrg service for free to customers that use only AT&T service.

However, AT&T will charge customers that split traffic a fee that's determined on a per-customer basis. MCI and Sprint will likely offer similar RespOrg services.

> Users aren't that worried about having one of their 800 carriers act as a RespOrg.
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Regional Bell holding companies and private firms trying to establish themselves as independent RespOrgs have yet to get many customers. The RBHCs and private firms argue they can provide better service to users splitting traffic because, as non-traffic-carrying entities, they will not be tempted to play favorites by providing better service for traffic destined for one carrier over another.

However, users aren't that worried about having one of their 800 carriers act as a RespOrg. In fact, some see it as a chance to keep their primary carrier on their toes.

“As businesspeople, carriers will have to be responsive,” says Mike Kistner, executive vice president of operations for Super 8 Motels, Inc. in Aberdeen, S.D., which consolidated all its 800 traffic with Sprint. “800 customers will hold them to the same level of service for the secondary carrier traffic as the primary. If someone were to treat my secondary carrier traffic as second class, I might rethink which carrier was primary and which carrier was secondary.”

Rest (service) assured

Much of the discussion about portability to date has focused on a number of concerns associated with increased call setup time and network reliability. For the most part, these fears have kept many customers on the sidelines, observing the portability process.

But, thankfully for users, many of these concerns are nonissues. In late 1992, users were concerned that the technology used to make 800 portability possible was rough around the edges. So they fought to have the actual date of portability shifted by several months to avoid cutover to the new technology during the busy Christmas season.

The fears were unfounded, though. The technology has been in place and running for several months — the earliest installations began in February — and no carrier has reported a major outage.

An important fact portability fence sitters should remember is that all 800 services — not just those of users that have switched carriers — are running on the

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(continued from page 40)

post-portability network architecture. So fears that call setup time will increase or 800 numbers will be lost in a new database cannot be used as reasons to avoid considering a carrier switch.

The FCC standards for end-to-end call setup time in the portability environment now require 97% of calls to be completed in five seconds or less. Carriers say network performance data shows they are hitting these figures. By 1995, call setup time should be around 2½ seconds.

The reason for longer permissible call setup times now has to do with the fact that local exchange carriers have yet to tie all their switches into an SS7 network. In cases where an 800 call's originating switch is not linked to an SS7 net, the call must be passed through the local exchange carrier network to a switch that is tied to an SS7 net, thus resulting in a longer call setup time.

"We have not seen any noticeable difference in call setup since portability," says Bill Sthay, vice president of reservations and room control for Outriggers Hotels Hawaii, Inc. in Honolulu, which switched from Sprint to AT&T. "There have been no customer complaints since the portability change."

"We have not seen any noticeable difference in call setup since portability."

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Another concern for users at the onset of portability is network reliability, which has prompted carriers to blanket the market with advertisements claiming their network is the most reliable.

Carriers are willing to back up their reliability claims with service guarantees. While many users see this as a bonus, the real advantage is the underlying improvement in network reliability.

"Guarantee plans are nice," says Super Eight's Kistner. "But what makes me excited is that the carriers have improved their network reliability to the point where they are willing to make these guarantees."

In a game of one-upmanship, carriers have also been rolling out service assurance plans. In recent months, the Big Three carriers have been crowing that their response time to 800 call completion problems is so fast that customers are guaranteed that virtually all calls will get through no matter what.

AT&T's Service Assurance-plan promises that if anything disrupts any of a customer's 800 lines — whether it be equipment failure, line problem or local disaster — AT&T will activate a choice of backup services within five minutes, beginning from the moment a customer contacts AT&T.

These backup services include routing calls to another AT&T 800 Service number, to a new AT&T 800 Readyline number or to a network announcement stating the nature of the problem. There is no charge for this plan.

Customers are also protected by AT&T's new Never Miss A Call Guarantee, which will make sure a call is answered in some manner when the subscriber is unable to accept a call. These calls may be rerouted to AT&T Voice Mail service, AT&T's network-based voice response system called InfoWorx, or AT&T's Transtech subsidiary, where an AT&T operator will answer for the customer.

As an added incentive, AT&T will waive the monthly service fee of roughly $50 for unsatisfied users.

MCI has a similar lineup, promising to provide its largest customers with alternate service for a single 800 number within just one minute of a disruption under its free 800 Guardian plan.

In addition, MCI will guarantee alternate service for a large customer with up to 250 different 800 numbers within five minutes.

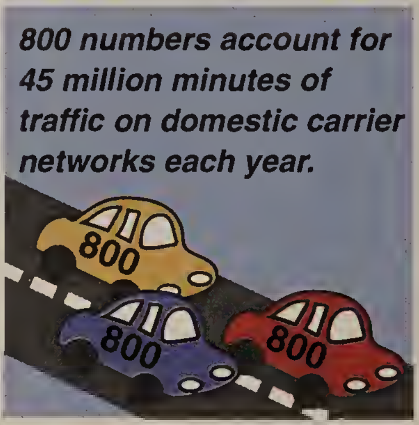
Alternatively, customers can employ 800 Guardian to have traffic routed to a customized network message, a voice mailbox or a specially trained MCI customer service representative who can collect information specified by each individual customer.

Sprint offers its Secure Satisfaction Guarantee at no charge. The guarantee gives users a refund of monthly recurring, installation, access line and usage fees up to a total of $50,000 per company (excluding taxes) for a problem incurred within 90 days of purchase. The problem must be Sprint-related, and customers need to send a written notice to Sprint documenting what portion of the service did not meet their requirements, open a trouble ticket or present a copy of their service invoice to qualify for the guarantee.

Sprint also offers Sprint Secure as an alternate service plan at no charge. Under the plan, if customers are unable to receive calls on a Sprint 800 number, the carrier will reroute calls to a preferred alternate location within five minutes if Sprint has a predefined routing plan from the customer and 30 minutes otherwise. If not, then the monthly service fee is credited to the account. Unlike Secure Satisfaction, this guarantee applies regardless of the cause of disruption.

Use one, get one free

While pricing in this new environment is still hard to project, AT&T is offering customers rewards for using its 800 service. Through its Partners In Business plan, AT&T 800 customers earn points redeemable for any of more than 40 offers, including advanced 800 features, network management services, call center training, consulting services and advertising in the AT&T Toll Free 800 Directory.


800 numbers account for 45 million minutes of traffic on domestic carrier networks each year.

Users with at least $200 per month in 800 domestic usage earn points when they purchase advanced 800 features, add new 800 numbers and routing arrangements, increase their 800 usage, sign up for an 800 term plan or when they reach designated anniversaries of their enrollment in the program.

There are some restrictions. For instance, the plan does not apply to 800 Validator Service, Signature 800 Service, International 800 Service, Outbound CustomNet Service or UniPlan Service users. Also, points have to be redeemed by the end of the year following the year in which they are earned.

Neither Sprint nor MCI have publicly announced a similar plan.

While some users may find the rewards program provides freebies that reduce their overall 800 bill, many others are counting on seeing a drop in overall expenditures drop due in large measure to reduced rates and discount plans brought on by competition.

In fact, 45.5% of readers queried in a recent *Network World*/TeleChoice, Inc. survey said they expect expenditures to drop an average of 12%. Another 15.8% expect rates to remain about the same, while 27.7% indicated overall expenses will go up an average of 9.7% due largely to an expected increase in the number of calls received.

Users also expect prices for advanced 800 features to drop. In the past, the cost of many of these features put them beyond the reach of some customers.

"Cost savings for my features really makes the difference for my business," says Medline Industries' Zeman. "With my old carrier, features were too costly to use." She obtained advanced features at off-prices from MCI during negotiations to switch carriers.

Another positive side effect of competition is that users can expect carriers to hit the streets with more new features at a faster pace than they have in the past in an effort to differentiate themselves.

A few weeks ago, AT&T unveiled its Global Transaction Network, which is designed to support and speed the processing of advanced 800 applications on the AT&T network (*NW,* May 24, page 1). The Global Transaction Network is supported by computer processors called Enhanced Network Control Points, which are deployed throughout the AT&T network and contain expanded memory, switching and other call-processing capabilities. The Global Transaction Network enables AT&T's network to support features that have traditionally been the domain of customer premises equipment, such as routing calls to the next available agent, caller recognition and priority routing, call queuing and call redirection.

Users can expect carriers to hit the streets with more new features at a faster pace.

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AT&T, MCI and Sprint have announced other new features

Hints to smooth out 800 switchovers

Users opting to switch 800-service carriers under portability can take several practical steps to make the transition as smooth as silk.

For instance, if you're bringing up dedicated facilities with a new carrier, don't be so hasty to disconnect the dedicated facilities from your old carrier.

Instead, leave them up for a week or two after the circuits to the new carrier are up. This way, if there is a problem with the new carrier, you can turn service back on with the old carrier.

Other helpful hints:

■ **The cutover between carriers should be made on a day when 800 traffic is low.** But don't pick the day with the lowest traffic because you might not encounter and solve problems until heavier traffic hits. For example, cutover on a Saturday instead of a Sunday so there will be enough traffic to monitor and enough time to correct problems before the Monday onslaught.

■ **Prioritize the numbers you want to change over and start changing over less important internal numbers before switching over the important commercial numbers your customers use.** If you have a lot of numbers, spread the changeovers out over time to ensure that you can properly test a number and resolve problems before having to do the next changeover.

■ **Have a good test plan and crew in place to monitor the cutover.** Make a record of your traffic patterns several weeks before the cutover so you have something to compare to on cutover day. And make sure that traffic overflow schemes work with the new carrier.

■ **Get your carrier to place test calls from each region if you have a nationwide number but don't regularly get calls from all regions of the country.** Otherwise, a problem with one local exchange carrier's ability to dip into the nationwide 800 database may not show up for some time.

But most of all, heed the advice of Bart Greenwood, vice president of network systems for Norwest Corp. in Minneapolis. "Don't lose too much sleep over a portability transition. We were expecting the transition to be a much bigger deal than it was. Outside of my team and the carrier, nobody knew what happened."

to try to capture more market share.

In February, AT&T launched its 800 Speech Recognition service that reacts to callers' spoken commands to route calls to specific locations. For instance, a caller dialing an 800 number would be prompted to say a number that represents the department or person to which the call should be routed.

Although the vocabulary is limited to a handful of words, those few commands can control a vast majority of advanced 800 menuing applications.

"When you've got 39% of the telephones in the U.S. still doing pulse dialing, you need to be able to support both [dual-tone multifrequency] and voice response input," says Shaun Gilmore, marketing vice president for AT&T 800 Service. In AT&T's field tests of the technology, spoken numbers were correctly identified 97.8% of the time. "Until this feature was developed, a large percentage of callers had to wait in queue for a representative to take [and route] their call."

With the advanced capabilities enabled by SS7, users will start seeing true end-to-end intelligent network features.

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MCI launched its 800 Enhanced Call Router platform late last year, an enhanced menuing platform for processing inbound calls to the appropriate destinations.

Customers can use 800 Enhanced Call Router in order to prompt callers to enter commands from a telephone keypad in order to reach the right department or person.

Based on this capability, MCI offers Home Office Link, which routes calls to an employee's home office when callers enter a preassigned personal identification number in response to a voice prompt.

Calls can be routed back to a company-operated message center if the employee is busy or not home.

Sprint offers Sprint Interface to External Routing Processor (SiteRP) and Network Call Distributor (NCD) options, which interact with Sprint's network to route calls.

SiteRP queries a customer's automatic call distributor database to determine how to route a call based on calling conditions at the location.

NCD collects equipment status information from all locations and uses a Sprint network-based database to determine how to route calls by how busy each location is.

AT&T offers similar capabilities via its Intelligent Call Processor, which enables customer premises equipment to control how the AT&T network routes calls.

The addition of portability to the technical capabilities of the nation's carriers overshadows an important event that will have a far greater impact on user networks — the interconnection of the nation's disparate carrier networks with an integrated SS7 network.

With the advanced capabilities enabled by SS7, users will start seeing true end-to-end intelligent network features, such as Integrated Services Digital Network services.

Reaching a milestone

While 800 portability is a critical event, it is also a milestone, a first down toward the goal line. While many users may decide to delay acting on the new freedom enabled by portability, it will impact their decisions down the road as contracts expire and requirements change.

Other users should act now. "Customers should take advantage of portability, even if they plan to stay with the same carrier, in order to negotiate a better deal," says National Westminster's Ryan. "To do nothing is to lose a marvelous opportunity."

Portability aside, the issues involved in choosing an 800 carrier are not likely to change much in the next year or two. Users should be prepared to rule on whether their present carrier is keeping pace with competitors. If not, then at least they now have the option to switch teams. ◻

Briere is president of and Langner is a senior analyst with TeleChoice, Inc., a Verona, N.J., consultancy specializing in strategic planning and analysis of intelligent networks, services and applications.

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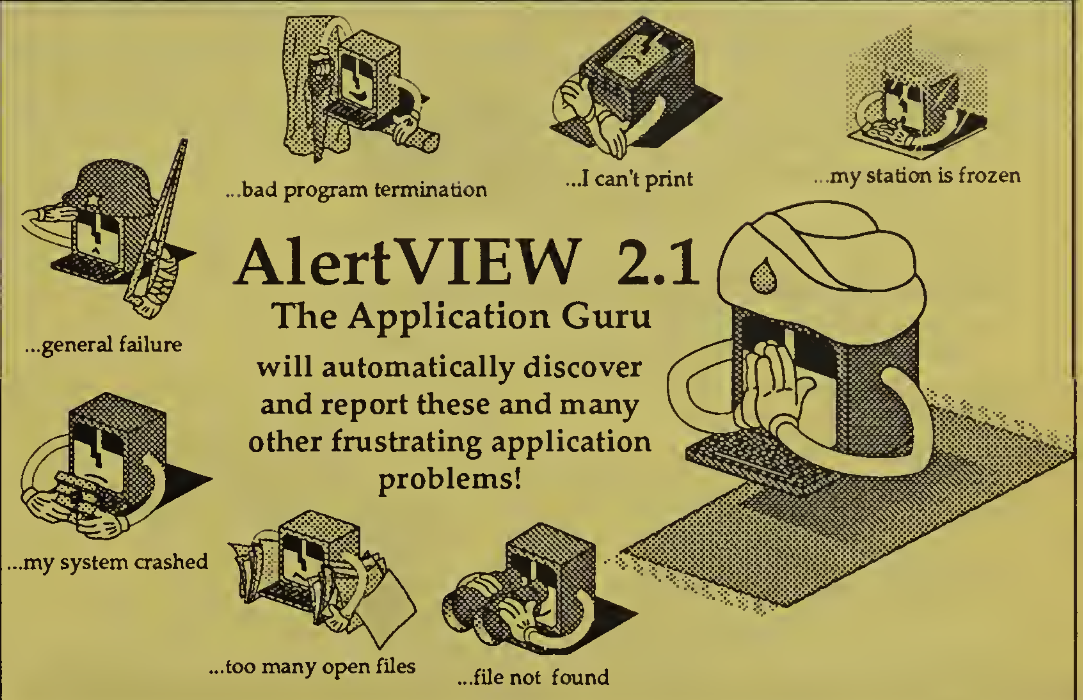

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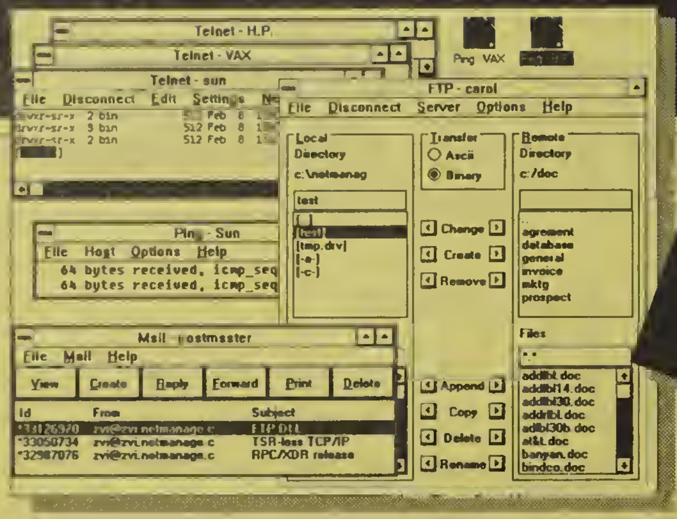

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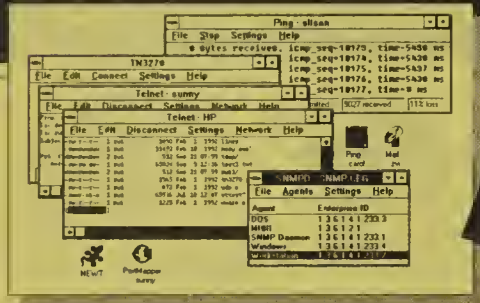

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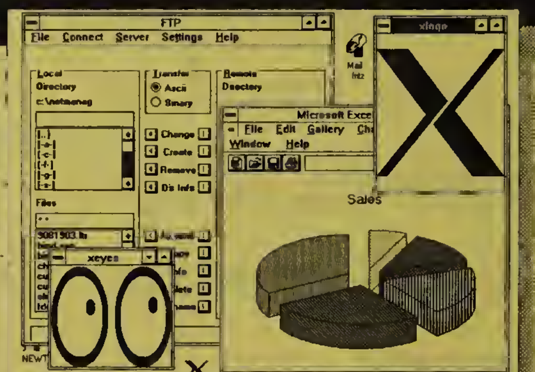

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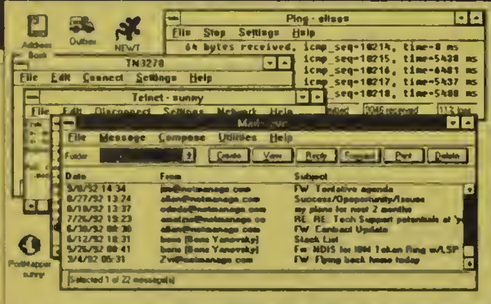

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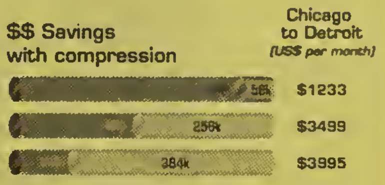

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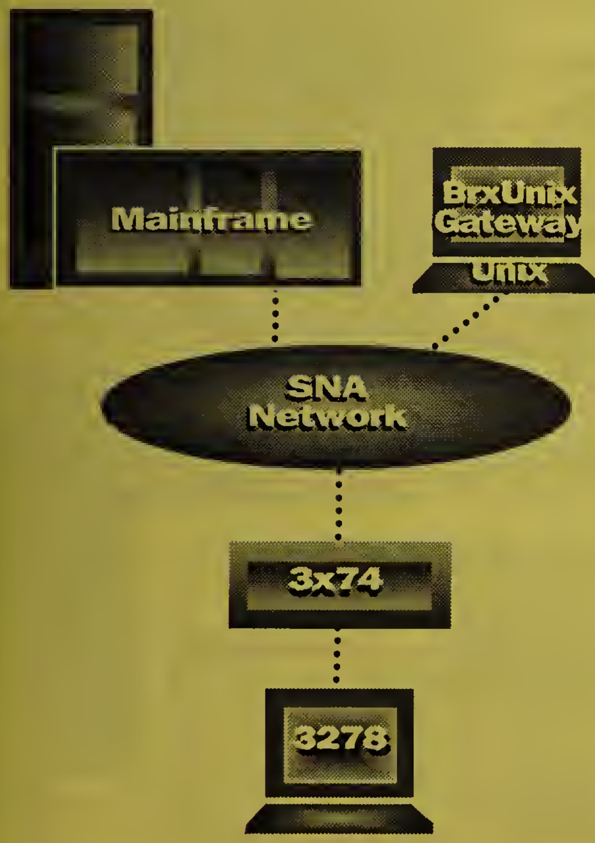

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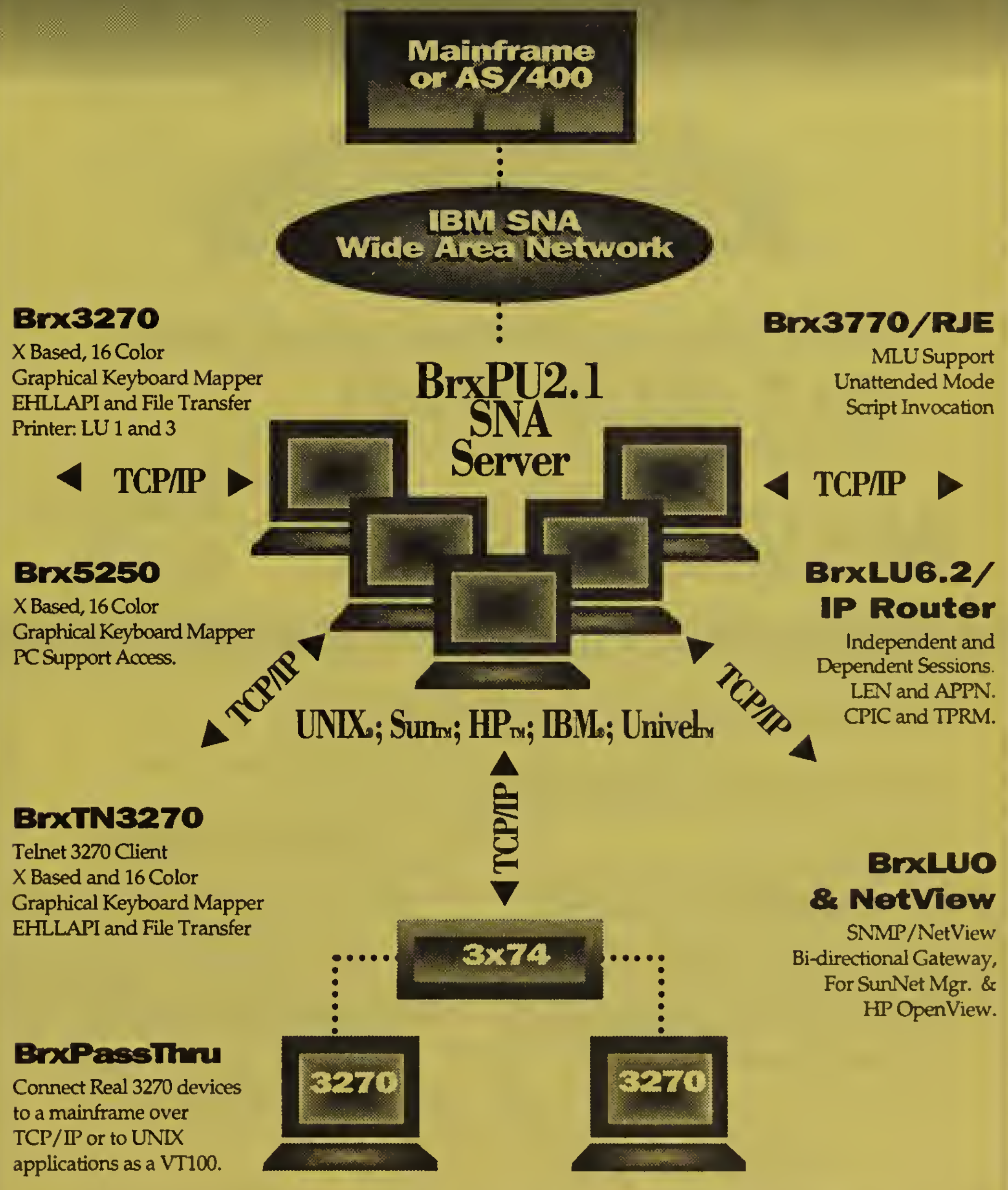

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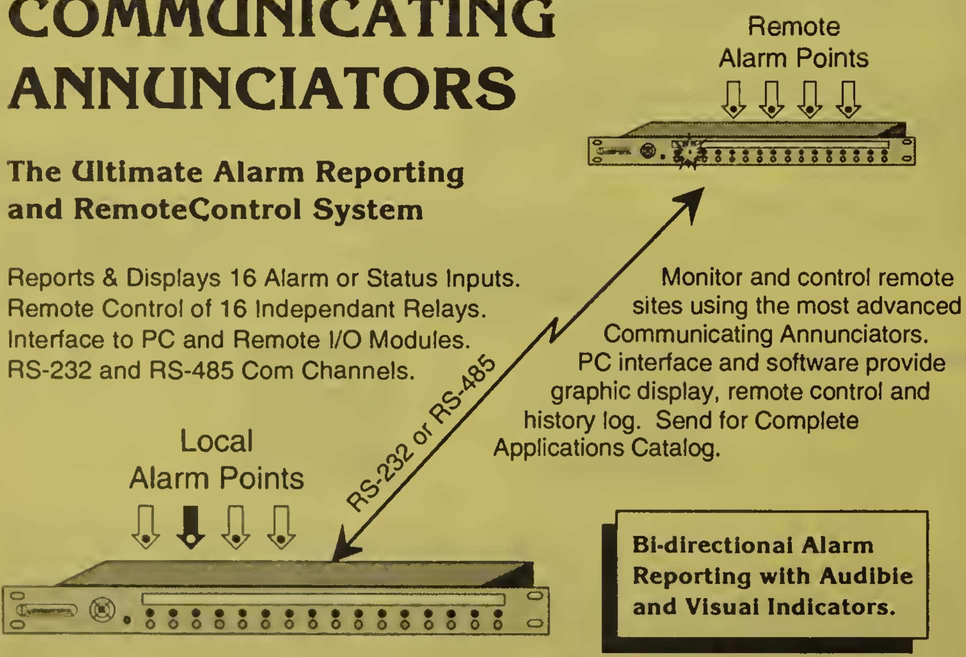

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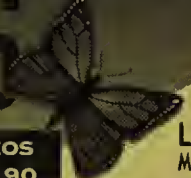

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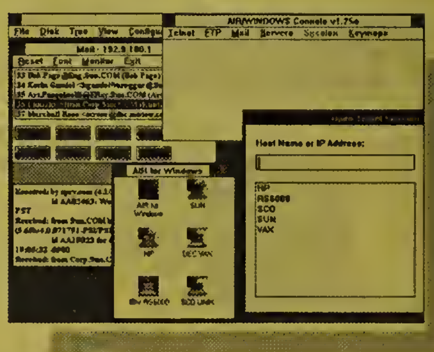

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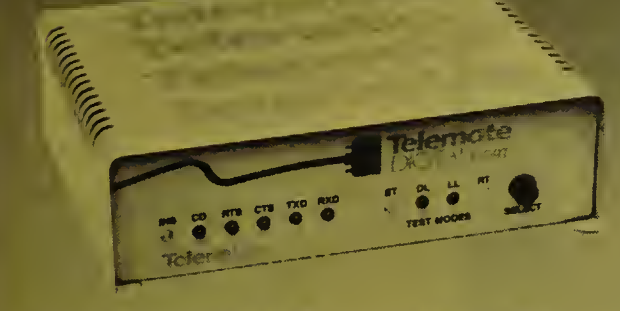

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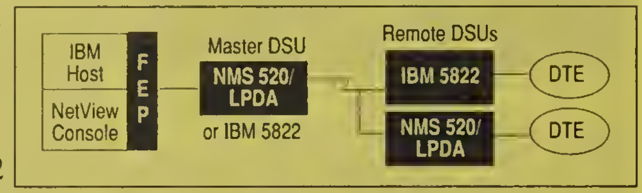

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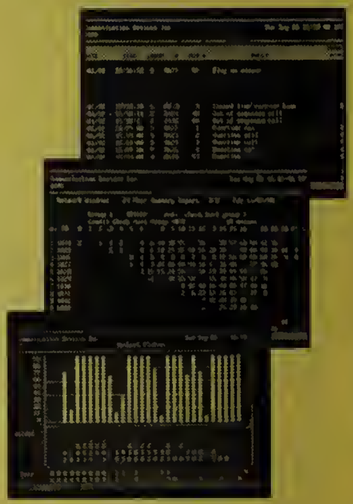

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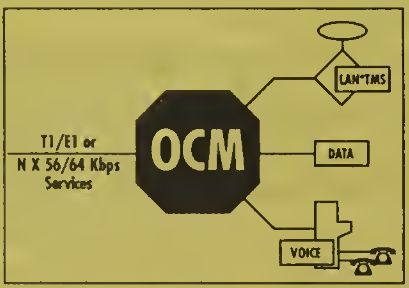

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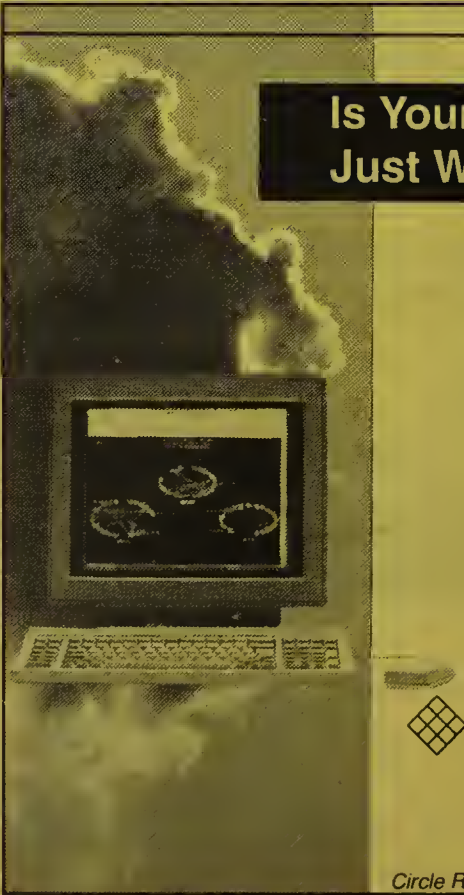

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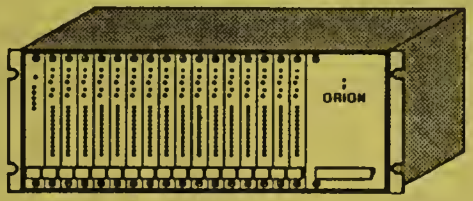

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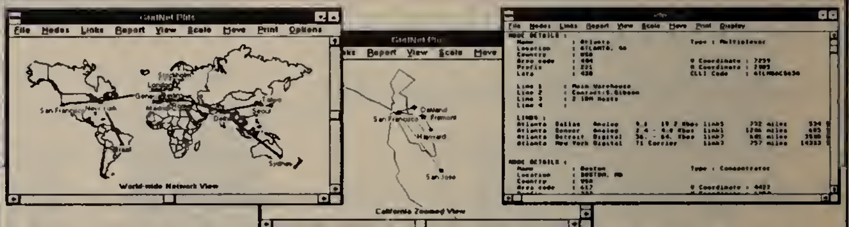

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Critics hit AT&T on custom shift

continued from page 1

the Washington, D.C.-based law firm Gardner, Carton & Douglas, who has negotiated custom network deals for clients.

At the least, users must recognize the need to negotiate Tariff 12-type benefits into contract tariff arrangements, said Hank Levine, an attorney with the Washington, D.C. law firm Levine, Lapaga & Bloch.

Since the Federal Communications Commission allowed AT&T to negotiate "contract tariffs" last spring, AT&T has filed 150 such deals. Most of the early ones were for a discounted single service, but contract tariffs have increasingly become a standard feature in AT&T's bidding strategy for large corporate nets.

More than 90 contract tariffs have been filed this year alone compared to about 120 Tariff 12 filings AT&T has made since 1989, only a few of which have been filed this year.

"Three months ago, AT&T began to offer contract tariffs to the people who used to be offered Tariff 12s," Levine said. "As a contract tariff holder, the only right you have is to pay the bill."

Levine

Levine said users may get percentage discounts with a contract tariff, but when the rates go up, so will the customer's charges. This differs from Tariff 12, where rates are stabilized, he explained, adding that only about 20% of the contract tariffs include stabilized rates.

Levine also pointed out that, with a Tariff 12, customers can negotiate the right to move volumes of traffic among service categories without losing discounts.

"AT&T has flatly refused to do this with contract tariffs," he said. "With a single misstep, the customer can lose millions of dollars in discounts."

AT&T insists that contract tariffs and Tariff 12s address different sets of customer requirements. "Tariff 12 Virtual Telecommunications Network Service is for integrated service — inbound, outbound and complex data networking services, and complex billing needs," said Jack Swift, AT&T manager of VTNS offerings. "Contracts are targeted at less complex applications."

Choice key to IBM strategy

continued from page 1

To clarify IBM's plans regarding its management strategy, Sanjiv Ahuja, manager of the NetView/6000 family and leader of the NetView/6000 initiative begun in 1991, sat down with Anura Gurugé for this special to *Network World*.

Disclosures in the past few weeks of new management tools such as SNA/6000, which gives NetView/6000 a window into NetView, have raised questions about IBM's changing management focus. Can you say exactly what the new thrust is?

SNA/6000 is only a part of the new initiative — a small part at that. What we are moving toward is pan-enterprise management from distributed, Unix platforms. The key, however, is that we will always offer the customer base choice as well as flexibility. Our customers will be able to realize their management goals using either NetView/390, NetView/6000 or using both in a cooperative manner.

The management focus, particularly from NetView/6000, will now be extended to encompass LAN work groups, system and application software — for example, Lotus 1-2-3 or CICS/2 on OS/2 — PBXs, T-1 muxes and modems, as well as all major network types, including IP, DECnet, SNA, [Advanced Peer-to-Peer Networking] and IPX.

Our approach to such a management challenge is very different from those of other Unix/SNMP platforms. After nearly 15 years of solid experience with NetView, we know all the issues that pertain to large-scale management integration, automation and scalability. We are already the only system that — when dealing with IP, IPX, DECnet, APPN, SNA and NETBIOS networks — allows you to integrate the total management effort.

For example, we can show the topologies of these disparate networks overlaid on one map and in one window, as opposed to the separate window per protocol used by others. Integration continues to be a major thrust. So even with SNA/6000, we will be a peer relative to NetView/390 and support the full ACF/VTAM and NetView command repertoire.

So from NetView/6000, you will be able to enter the standard ACF/VTAM activation and deactivation requests such as "Vary Net, Activate." These are the characteristics of the new thrust: cooperation, integration and a vastly expanded scope, particularly as it applies to work groups and applications.

Can you elaborate on the management services you will provide for work groups and applications from NetView/6000?

For a start, we will manage LAN work groups consisting of DOS, Windows, Macintosh and OS/2 workstation clients, and OS/2 and Novell servers. The topology display, alert management and operational control of these work groups will be integrated with WAN, bridge/router, telco [for example, multiplexers, modems and PBXs] and SNA/APPN management. We will also incorporate media management along the lines of LAN Network Manager for Token Ring, Ethernet and FDDI.

For applications, in addition to remote configuration and installation capabilities, we will add comprehensive support for alert generation. So now if a 1-2-3 user encounters an error, an alert can be sent to the network manager. This is a major leap in the industry in terms of application and service management. [During the next 12 to 18 months] we are delivering full bore on the total heterogeneous system management goals we set in 1990 with SystemView.

Don't those work group and media management functions impinge on those offered by LAN NetView and LAN Network Manager?

To an extent, yes. But, again, this is in our spirit of providing

IBM hones mgmt. lineup

NEW YORK — IBM last week announced new and enhanced products that help fulfill the promise of its SystemView enterprise management strategy by helping users monitor, tune and automate network and system functions from a central location.

The new SystemView Enterprise Performance Data Manager/MVS (EPDM) Version 1 is an MVS application that collects Systems Network Architecture net and system performance data from CICS, IMS and other sources and stores it in a DB2 database. EPDM replaces IBM's Service Level Reporter, which can only monitor MVS performance.

EPDM consists of base, network, system, CICS and IMS components.

The base component provides the interface for systems and network data to flow into DB2. The network performance component works with the existing NetView Performance Monitor and NetView Hardware Monitor to gather utilization and capacity data on VTAM, Network Control Program, communication lines, IBM Token-Ring Networks and other SNA components.

EPDM's system performance feature lets users monitor MVS for mainframe utilization, availability and capacity problems. For example, users can detect a shortage of memory that might slow down the mainframe. Likewise, the CICS and IMS components monitor the performance of those subsystems.

Users can gather data from all the components into a DB2 central database, making it easier to spot net bottlenecks and other performance problems.

Data is diagnosed from an attached OS/2-based personal computer running a new application, Reporting Dialog/2. The application displays EPDM data graphically and lets users create reports on items such as performance trends and available network resources.

The EPDM components will be available June 25, except for the Reporting Dialog/2 and IMS features, which will be available in September. Base prices will run between $4,270 and $116,150, depending on the processor size. The system and network performance components will run from $2,110 to $58,080, and the CICS and IMS features will cost $1,630 to $44,930. The Reporting Dialog/2 application will sell for $300.

IBM also announced an improved version of its Operations Planning and Control (OPC)/ESA program. OPC/ESA is an MVS mainframe program that lets user automate, monitor and control on-line transaction processing applications, file transfers and batch processing throughout their enterprise nets.

With OPC/ESA Version 1 Release 2 Modification 1, users can now automatically recover failed data transfers rather than having to manually restart them, as they had to do in the past.

There is no charge for the program, which will be available Oct. 29.

IBM: (800) 426-2468.

— Michael Cooney

AT&T said it can take six or more months to work out a Tariff 12 offer, while contract deals can be cut more quickly. "That's baloney," said Blaszak. "Tariff 12 doesn't take six months to do."

AT&T is steering customers to contract deals because they are easier to administer and give AT&T more control over the agreement, according to Levine.

Schneider National, Inc., a nationwide trucking firm in Green Bay, Wis., is considering taking its business elsewhere. Schneider — which issued a request for proposal for 800 service, virtual private network, private lines and other services with an expected value of $30 million over three years — received bids from long-haul carriers late last month.

Doug Martzke, manager of telecommunications at Schneider, has been evaluating the bids, including a contract tariff offer from AT&T.

Martzke said the firm's RFP had requested price stability over three years, but the AT&T tariff contract offer does not guarantee that prices will not change. AT&T's competitors were more flexible on pricing, guaranteeing price stability, he said.

"I said I wanted their best deal," he said. "Maybe I'll ask why I didn't get a Tariff 12."

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the customers with choice and flexibility. Now users that want these management functions can get it using either Intel- or RISC/Unix-based platforms.

NetView/6000 today is really just another SNMP-based system. How will it broaden its scope over the next year to become a full-spectrum, enterprise manager, embracing entities not typically managed using SNMP?

The short answer to that is agents, but agents aren't the be-all and end-all that people think they are to realizing heterogeneous management systems. They are but the tip of the iceberg.

The real issues are things like scalability. We are not going to be managing just 100 or 1,000 entities, but tens of thousands. The real secret of doing this is distributed management using peer-to-peer techniques. We will introduce the concept of Segment Managers. A segment monitor will detect and resolve problems as close to the source as possible.

In essence, these Segment Managers will be mini, though peer-oriented, NetView systems. They will not, however, require a dedicated workstation. Moreover, they will be able to run on non-IBM Unix platforms, such as Sun or HP, as well as non-Unix platforms.

A parallel solution for addressing [the scalability issue] is increasing the processing power, and that we will do by offering NetView/6000 on our heavily parallel, PowerParallel RS/6000 product line that will be available toward year end.

Does this imply that there are no constraints as to the size or complexity of networks that you intend to manage?

Yes and no. Even with PowerParallel, it would not be reasonable to believe that a 600,000 end-user SNA network could be managed from one NetView/6000, or with NetView/6000 only — at least for the time being. Particularly when dealing with enterprises that may have large SNA networks, we will typically adopt a peer-to-peer, cooperative management structure that will involve NetView/390. The interactions with NetView/390 will be via a full-duplex LU 6.2 session, on a focal point-to-focal point basis. So the days when an SNMP-based system could only interact with the host via a service point interface, using a gateway, are soon to be history.

What about managing APPN networks?

We will provide comprehensive support — fully integrated topology display, alerts and command/control — for APPN networks that are built around the IBM 6611 bridge/router APPN Network Node capability. Right now, we cannot manage APPN networks that are not 6611-based. We are looking at how we can extend our APPN scope to all APPN networks.

You have talked about work group, application, media, telco, SNA, APPN and multiprotocol network management. Is this all you need to be successful?

Not really. We now also need to work on the platforms — RISC, Intel and host — on which these solutions will be provided. We want to consolidate most of the functions of NetView/6000, LAN Network Manager and Lan NetView so they are all available from either the RISC System/6000 or OS/2 platform.

Guruge is an independent consultant specializing in internetworking and IBM network architectures. He writes extensively, presents seminars worldwide and can be reached at (603) 878-1303 or via Internet/MCI Mail at aguruge@mcimail.com.

BT, MCI in net tag team

continued from page 1

own as much as 20% of a U.S. telephone company, but the two carriers plan to ask the FCC for a declaratory ruling to avoid regulatory surprises.

As yet unnamed, the joint venture will be based in London or Washington, D.C. and will be responsible for network management and strategic direction of services. BT and MCI will handle the actual contact with the public for marketing, sales and account management, acting as distributors for jointly branded products and services.

The companies plan to invest about $1 billion in the company, which will be 75% owned by BT and 25% owned by MCI. The venture will have roughly 1,000 employees initially and is expected to eventually grow to 3,000.

BT's Syncordia Corp., a network outsourcing vendor that the carrier started up in 1991, will become part of the new venture when the deal closes. Syncordia has six customers with a total of 10 contracts providing $200 million in revenues. The unit is still losing money, but BT claims to be happy with its position in a market that it expects to grow at 30% per year.

Splitting the globe

Between them, the companies have carved up the world — MCI will rule over the Western Hemisphere, while BT presides over an empire encompassing Europe, Asia and the Far East. With 40% of the world's multinational corporations headquartered in the U.S. and an additional 13% in the U.K., the two will have the majority of the globe's multinational corporations in their own backyards.

The business advantages for the two companies will include a wider theater of operations and quicker service development. The alliance will also strengthen the companies' ability to offer end-to-end services without bringing in outside suppliers to complete a link.

In announcing the partnership, MCI's Roberts hailed the alliance as "the telecom deal of the century" and an extraordinary strategic fit.

On MCI's side, the deal will allow the company to make the leap to being an equal competitor in the global arena as well as provide the company with a sizable war chest of BT cash. Possible uses for the $4.3 billion include a network upgrade or the purchase of a wireless carrier, a cable network or a competitive access provider.

For BT, which has been fighting AT&T over access to the U.S. market, the deal lets it join forces with MCI, which has been a thorn in AT&T's side since its founding.

"We have already made good progress in North America, but to fulfill our ambitions fully we have always recognized that we need a strong American partner," said BT Chairman Ian Vallance. "MCI fits the bill perfectly."

BT's annual revenues total around $20 billion, and the carrier has roughly 26 million access lines in the U.K. MCI had 1992 revenues of $10.6 billion.

Once the network is in place, the companies will have a system capable of handling the advanced telecommunications services for the next several decades, according to Daniel Briere, president of TeleChoice, Inc. in Verona, N.J.

User reaction

Reaction among users was also generally favorable. The partnership promises a wider range of services than either of the companies could offer alone, said Reuben Lantto, director of international telecommunications with Cargill, Inc. in Minneapolis.

For example, MCI will now have access to BT's extensive X.25 network, he said.

To date, Cargill has relied mostly on private lines for its international links, but the company has begun to use BT's frame relay service.

Most of all, Lantto is hoping the alliance will mean a drop in service prices.

DEC readies new wireless wares

continued from page 4

Corp.-based computers and enables users to access DEC VAX applications via dial-up telephone lines, cellular phones or RAM Mobile Data, Inc.'s radio-based Mobitex packet network.

DECtransporter for OpenVMS VAX resides on VAX computers and serves as a TCP/IP gateway between the mobile user's corporate TCP/IP network and the RAM Mobitex network.

DECtransporter for MS DOS/Windows costs $199, and DECtransporter for OpenVMS VAX costs $999.

The new LAN products include two software packages that bridge PCs equipped with DEC's WaveLAN wireless LAN adapter with wired Ethernet LANs. WaveLAN adapters provide PCs with wireless connectivity to LANs at 2M bit/sec using spread-spectrum radio technology.

Wireless Network Connect is for in-building connectivity, while Remote Wireless Network Connect is for building-to-building connectivity.

The WaveLAN bridging software costs $1,700 for the local version and $4,900 for the remote package. All products are available now.

DEC is also expected to package previously separate TeamLinks functions in a new offering called TeamLinks Office.

TeamLinks is a set of software packages designed to hook Windows-based Pathworks LAN clients into DEC electronic mail backbones. It also provides file and document handling, conferencing and data browsing.

TeamLinks Office will include the E-mail, file routing and electronic conferencing capabilities of the groupware suite.

TeamLinks clients will also be able to deploy DEC's All-In-1 IOS mail servers in TeamLinks environments in addition to the DEC Mailworks servers TeamLinks now supports. And Macintosh users will now be able to take advantage of all the conferencing, document handling and E-mail functions that Windows users now have with TeamLinks.

Pricing and availability for the products were unavailable.

DEC: (800) 344-4825.

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WHEN DHL MEXICO NEEDED FAST DELIVERY, THEY CALLED GDC.

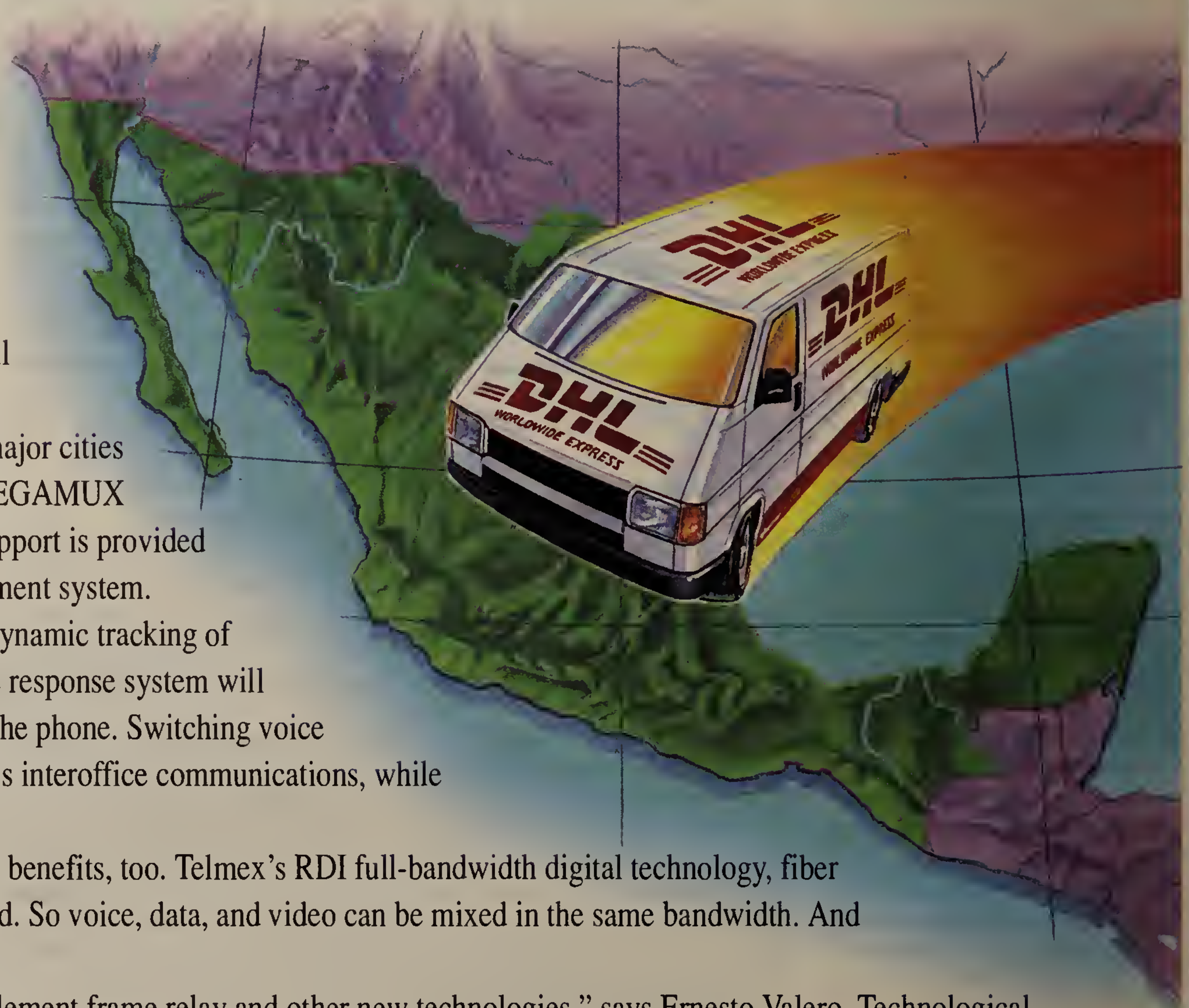
From its Mexico City gateway, DHL Internacional de Mexico, S.A., transports packages and documents for overnight delivery to more than 400 cities across Mexico, with direct service to Cuba.

In this increasingly competitive market, DHL felt the need for a strategic upgrade of its nationwide telecommunications network. In order to speed up delivery of voice, data, and video, it turned to GDC.

GDC has delivered everything DHL required: technology that protects DHL's investment by continually incorporating new technical developments; product modularity to simplify purchasing and maintenance; a strong technical support presence; and a record of successful installations in Mexico.

DHL is linking company facilities in eight major cities with a backbone network based on GDC's line of MEGAMUX TMS transport management system multiplexers. Support is provided by GDC's MEGAVIEW integrated network management system.

The network allows DHL to perform more dynamic tracking of packages for its customers. Soon an interactive voice response system will even let customers track shipments personally, over the phone. Switching voice traffic to its private network has also improved DHL's interoffice communications, while reducing its annual phone bill by a substantial 27%.



GDC's network enhancement provides other benefits, too. Telmex's RDI full-bandwidth digital technology, fiber optic cabling, and E1 connections can now be utilized. So voice, data, and video can be mixed in the same bandwidth. And even more advanced developments are on the way.

"We found with GDC an opportunity to implement frame relay and other new technologies," says Ernesto Valero, Technological Development Manager for DHL Mexico. "Considering the flexibility of the GDC equipment, we feel that our network investment will satisfy our requirements for the foreseeable future."

General DataComm's world class networks connect businesses and telephone companies in more than 60 countries. To connect with GDC, call +1-203-792-0542. In North America, call toll-free 1-800-777-4005.

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